SOAP AND CHEMICAL SPECIALTIES

DECEMBER 1961

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Simplicity of design won top honors for "Glade" mist air freshener in 1961 CSMA Aerosol Package Award competition. Winning packages in 13 other product categories flank "Glade," which is produced by S. C. Johnson & Son, Inc., Racine, Wis.

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insecticides
soaps & detergents
deodorants & disinfectants
cosmetics
industrial & household products
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0.05% Maprosyl 30

0.10% sodium alkyl sulfate

0.10% sodium alkyl aryl sulfonate

0.10% Maprosyl 30

0.1% Maprosyl 30 plus
0.1% sodium alkyl aryl sulfonate

Actual photographs of sections of 1010 cold rolled carbon steel after 4-week immersion at room temperature in various solutions—with and without Maprosyl 30. Concentrations refer to anhydrous chemicals in each case.

inhibit corrosion as you improve your product with

MAPROSYL 30®

■ The addition of Maprosyl 30 to your formula will check the corrosive deterioration of your aerosol or other metal container—and of metal equipment used during formulation. It will also protect metals on which your product may be used. ■ In addition, Maprosyl 30 has unusual wetting, foaming and detergent powers and is probably the least toxic anionic surfactant known. Its corrosion inhibiting qualities are particularly noticeable when it is used in combination with normally corroding surfactants. Maprosyl 30 has found wide use in fabric and dishwashing detergents, rug and upholstery shampoos and in many other chemical specialties, as well as in the cosmetic and toilet goods field. ■ Find out how this remarkable new surface active agent can help solve your corrosion problems, improve your products, and favorably influence your profit picture. Write now for the Onyx Data File on Maprosyl 30, and information on other Onyx products. ■ *Another Sales-Booster From Onyx.*

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CANDI-COAT-8000

WATER RESIN EMULSION (ACRYLIC TYPE)

THE **ANSWER** TO THE ELIMINATION OF **BLACK MARKING**

and all other discoloring and non-discoloring traffic marks

BASIC PROBLEM—

Develop a water resin emulsion (acrylic type) without the common faults of some of this group of floor coatings . . . **black marking, powdering and general lack of combined good performance as regards water resistance, anti-slip, durability and continued maintenance economy.**

SOLUTION—

CANDI-COAT-8000 consistently rates best by test and substantially outperforms other similar products on the market. In addition, CANDI-COAT-8000 will surpass *your* greatest expectations when measured against the highest quality standards for performance on floors of all kinds under traffic conditions for which a water resin emulsion is recommended.

CONCLUSION—

CANDI-COAT-8000, when properly applied, smoothes without pulling or ridging to a sensationally remarkable even, colorless, transparent, brilliant film. When dry, it gives the greatest protection, and *beauty* to any floor on which a water resin emulsion is recommended. The appearance of CANDI-COAT-8000 is *greatly* enhanced by the simplicity of continued maintenance . . . it will not chip, crack or peel and can be dry cleaned with negligible dulling or powdering. It is *extremely* resistant to dirt and discoloring traffic marks without sacrifice of complete removability, water resistance or safety underfoot.

We want to share with you this product success that needed our full 70 years background, experience and research efforts to create. CANDI-COAT-8000 *is* the opportunity you have wanted to sell accounts you never dreamed could be yours!

We invite your immediate inquiry for technical information and provision of such test samples as you may require.

All of our products are available for private brand resale. We sell them only through distributors, except for experimental accounts in Chicago that are essential to research projects.

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2515 W. 35th St., Chicago 32, Ill.

Vol. XXXVII, No. 12, Dec., 1961

Cover Photo: Winners of 1961 CSMA Aerosol Package Contest flank recently introduced "Glade" mist air freshener of S. C. Johnson & Son, Inc., Racine, Wis. "Glade," which was judged best in show, also won in its class, Room Deodorants. Product is packaged in Crown Can and features novel VCA, Inc., scalloped valve actuator that requires no overcap.

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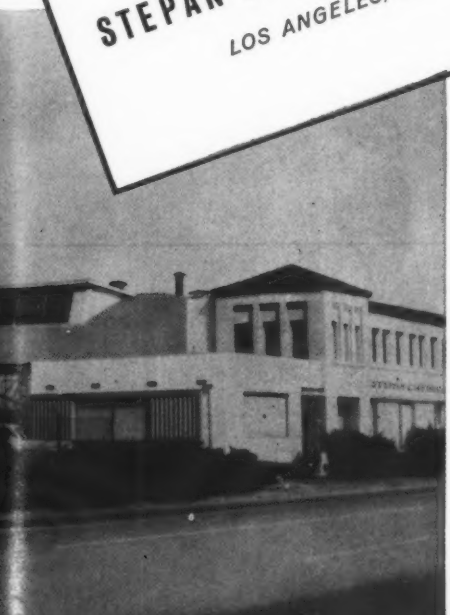

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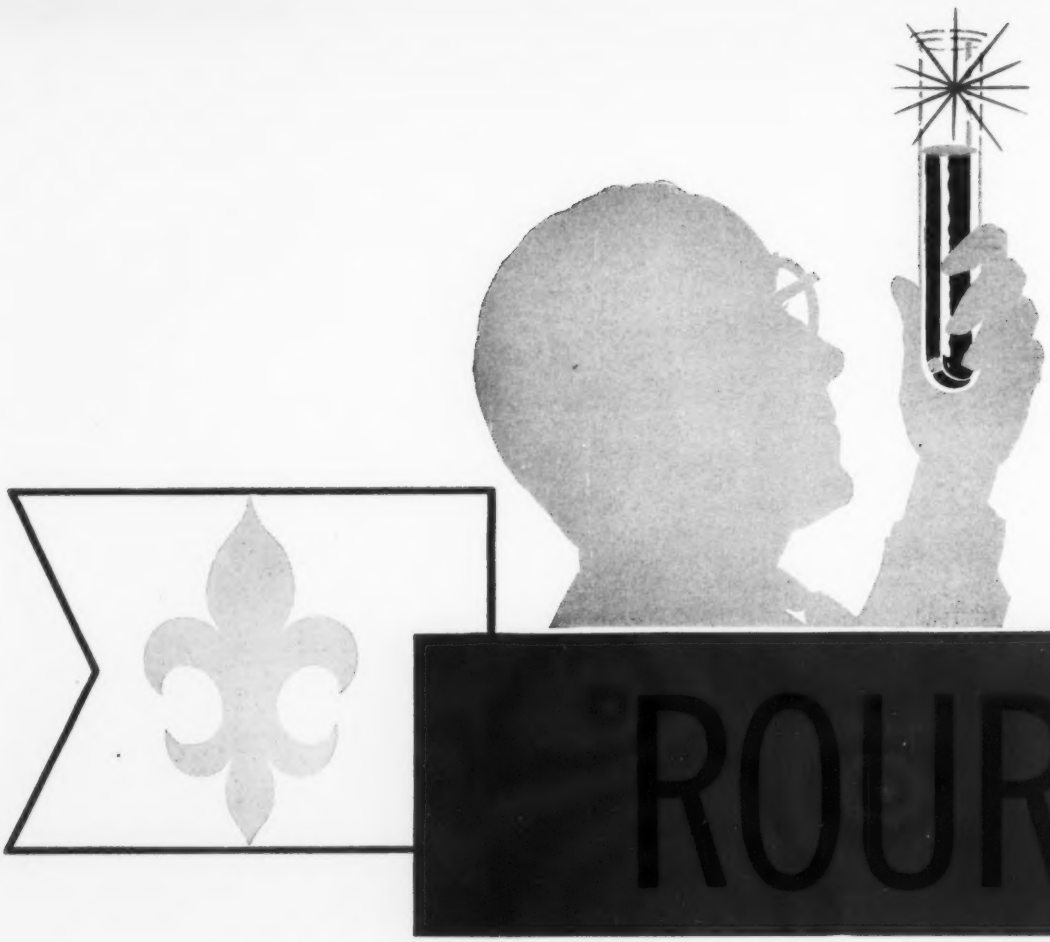

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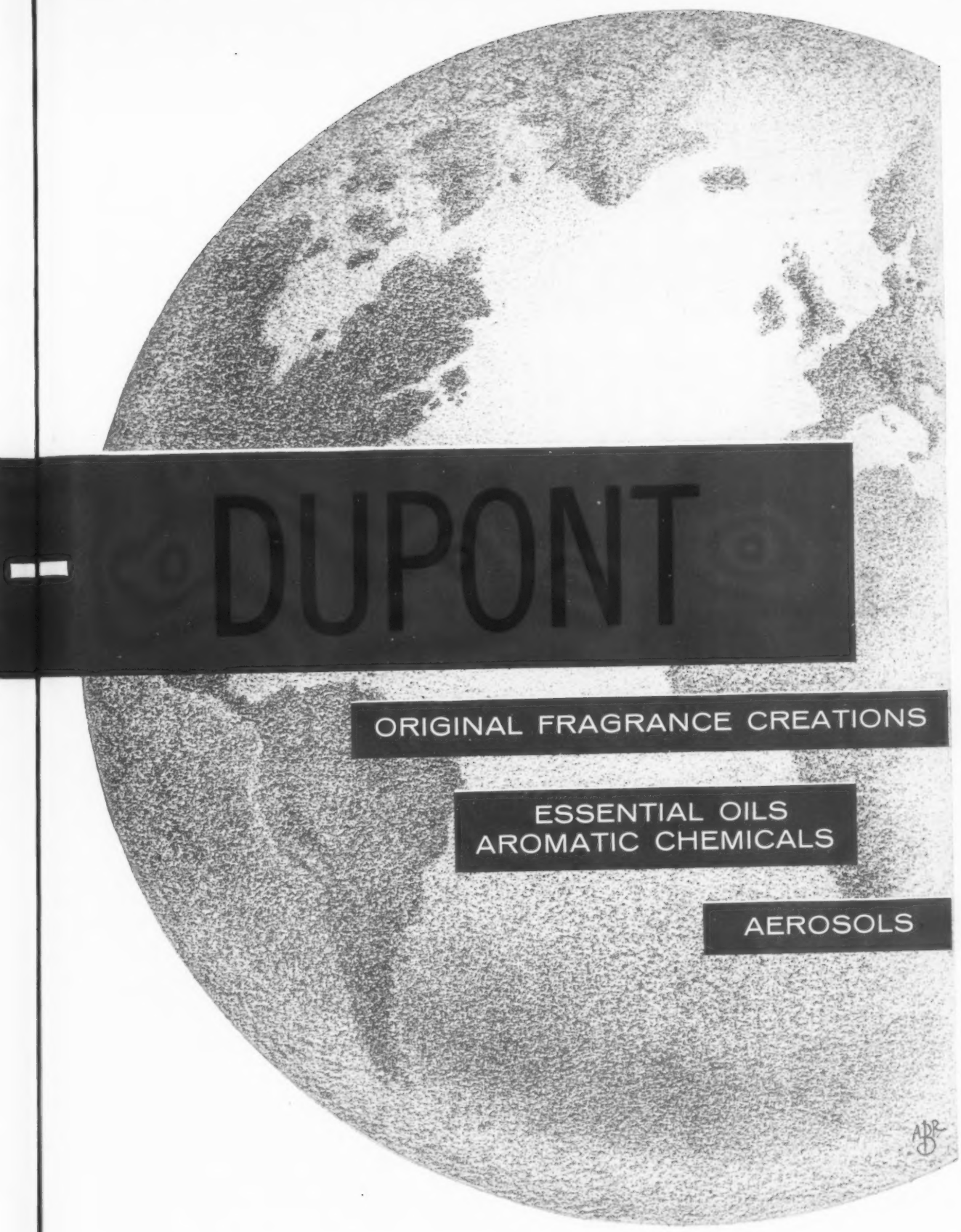
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New STEROX DF, DJ, NJ and NL were developed to give consistent performance and genuine economy. They are stable in acidic and alkaline media, even at elevated temperatures, and are effective in both hard and soft water. They provide *specific advantages* where low odor, light color and good detergency are wanted; and also where emulsification, wetting, foaming characteristics or liquid-solid contact is important.

To discover the specific advantages to you, check the table shown here. Then use the convenient coupon to get more information, samples and technical help. Or simply call your nearby Monsanto representative or service-minded distributor.

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Inorganic Chemicals Division
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Please send me ( ) Technical Data Sheets on new STEROX DF, DJ, NJ and NL.
( ) Comparison Card describing *16* STEROX and SANTOMERSE surfactants.

Name .....

Company .....

Address .....

City ..... *Zone* ..... *State* .....

Monsanto STEROX

DF

Ethylene oxide adduct of:	dodecyl phenol
Color, APHA (typical)	180
pH, 1% solution (typical)	7.0
Cloud Point, °C. (1% solution)	below 0
Foam, Ross Miles, cm. (0.1% @ 50°C.)	
25 ppm water, inst.	2.0
after 5 min.	1.9
150 ppm water, inst.	1.8
after 5 min.	1.7
Surface Tension (0.25% @ 25°C.)	32.7
Interfacial Tension (0.25% @ 25°C.)	2.3
Spreading Coefficient	−0.5
Draves Wetting Time, sec. (0.25% @ 25°C.)	75

Solubility... Miscible with water in all proportions. Soluble in many nonpolar solvents. Functions well wherever a surfactant would be desirable in oils or aliphatic solvents.

Other Promising Characteristics... Valuable intermediate for sulfation. Conversion produces high-foaming active ingredients especially suited for liquid detergents. Unreacted, it is a low-foaming surface-active agent for use *per se* and an excellent emulsifier.

Typical uses... In liquid detergents, emulsifiable toxicant concentrates, metal cleaning and treating compounds; as a paper rewetting agent and an emulsifier in a variety of applications.

Monsanto STEROX

DJ

Ethylene oxide adduct of:	dodecyl phenol
Color, APHA (typical)	100
pH, 1% solution (typical)	7.0
Cloud Point, °C. (1% solution)	40
Foam, Ross Miles, cm. (0.1% @ 50°C.)	
25 ppm water, inst.	2.9
after 5 min.	2.5
150 ppm water, inst.	2.8
after 5 min.	2.5
Surface Tension (0.25% @ 25°C.)	34
Interfacial Tension (0.25% @ 25°C.)	1.9
Spreading Coefficient	−1.4
Draves Wetting Time, sec. (0.25% @ 25°C.)	12
Detergency, unbuilt @ 60°C., 0.2% in 150 ppm water, as % lauryl sulfate	102

Solubility... Soluble in water and most polar solvents, but generally insoluble in nonpolar solvents.

Other Promising Characteristics... Low foam and high chemical stability are combined with effective functional properties and ease of use. Lack of odor typically associated with this type of surface-active material makes perfuming easier—helps build market appeal for your products.

Typical uses... In liquid and powdered detergents, chemical processing, textile dyes and scouring agents, and numerous compounds for metal cleaning and treating, paper de-inking, felt washing and other wet processing operations.

Monsanto STEROX

NJ

Ethylene oxide adduct of:	nonyl phenol
Color, APHA (typical)	50
pH, 1% solution (typical)	7.0
Cloud Point, °C. (1% solution)	54
Foam, Ross Miles, cm. (0.1% @ 50°C.)	
25 ppm water, inst.	12.9
after 5 min.	8.3
150 ppm water, inst.	12.7
after 5 min.	8.0
Surface Tension (0.25% @ 25°C.)	34.8
Interfacial Tension (0.25% @ 25°C.)	2.9
Spreading Coefficient	−3.2
Draves Wetting Time, sec. (0.25% @ 25°C.)	5
Detergency, unbuilt @ 60°C., 0.2% in 150 ppm water, as % lauryl sulfate	102

Solubility... Soluble in water and most polar solvents, but generally insoluble in nonpolar solvents.

Other Promising Characteristics... Exceptionally light colored, this "wheel horse" nonionic is effective *per se* as an emulsifier and as a light-duty detergent for hard surfaces. In combination with SANTOMERSE alkyl aryl-sulfonates, it exhibits foam-stabilizing effects, and produces a denser foam than that obtained with alkyl aryl sulfonates alone.

Typical uses... In liquid and powdered detergents, insecticides, and in numerous compounds for textile, paper and leather processing, chemical processing, petroleum acidizing and secondary recovery.

Monsanto STEROX

NL

Ethylene oxide adduct of:	nonyl phenol
Color, APHA (typical)	100
pH, 1% solution (typical)	7.0
Cloud Point, °C. (1% solution)	76
Foam, Ross Miles, cm. (0.1% @ 50°C.)	
25 ppm water, inst.	15.5
after 5 min.	8.8
150 ppm water, inst.	15.6
after 5 min.	8.6
Surface Tension (0.25% @ 25°C.)	36.2
Interfacial Tension (0.25% @ 25°C.)	4.3
Spreading Coefficient	−6.0
Draves Wetting Time, sec. (0.25% @ 25°C.)	7
Detergency, unbuilt @ 60°C., 0.2% in 150 ppm water, as % lauryl sulfate	103

Solubility... More soluble than Sterox NJ. Especially useful in solutions containing inorganic salts or SANTOMERSE® alkyl aryl sulfonates.

Other Promising Characteristics... Primarily designed for use in liquid detergents. Exceptionally valuable for this application in combination with Monsanto TKPP. Effective *per se* as an emulsifier and light-duty detergent for hard surfaces. In combination with SANTOMERSE alkyl aryl sulfonates, it exhibits foam-stabilizing effects and produces a denser foam than that obtained with alkyl aryl sulfonates alone.

Typical uses... In liquid detergents, industrial cleaners, textile scouring and soaping-off compounds, many specialty products; as a post-polymerization latex paint stabilizer.

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the balanced
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- Complete stability at all temperatures. Sustained chelating power. Lengthened shelf-life.
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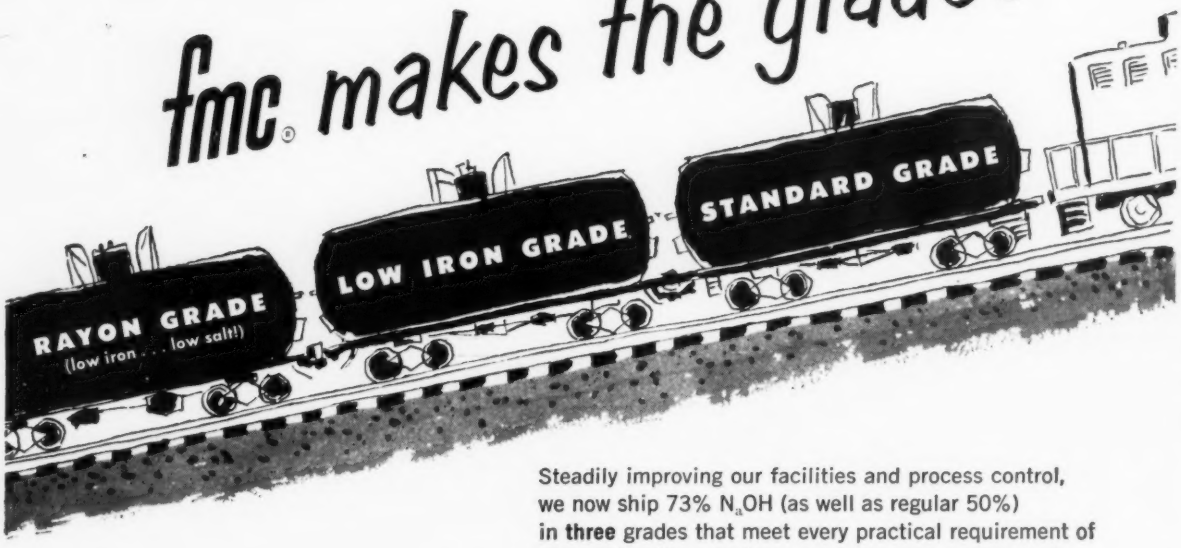

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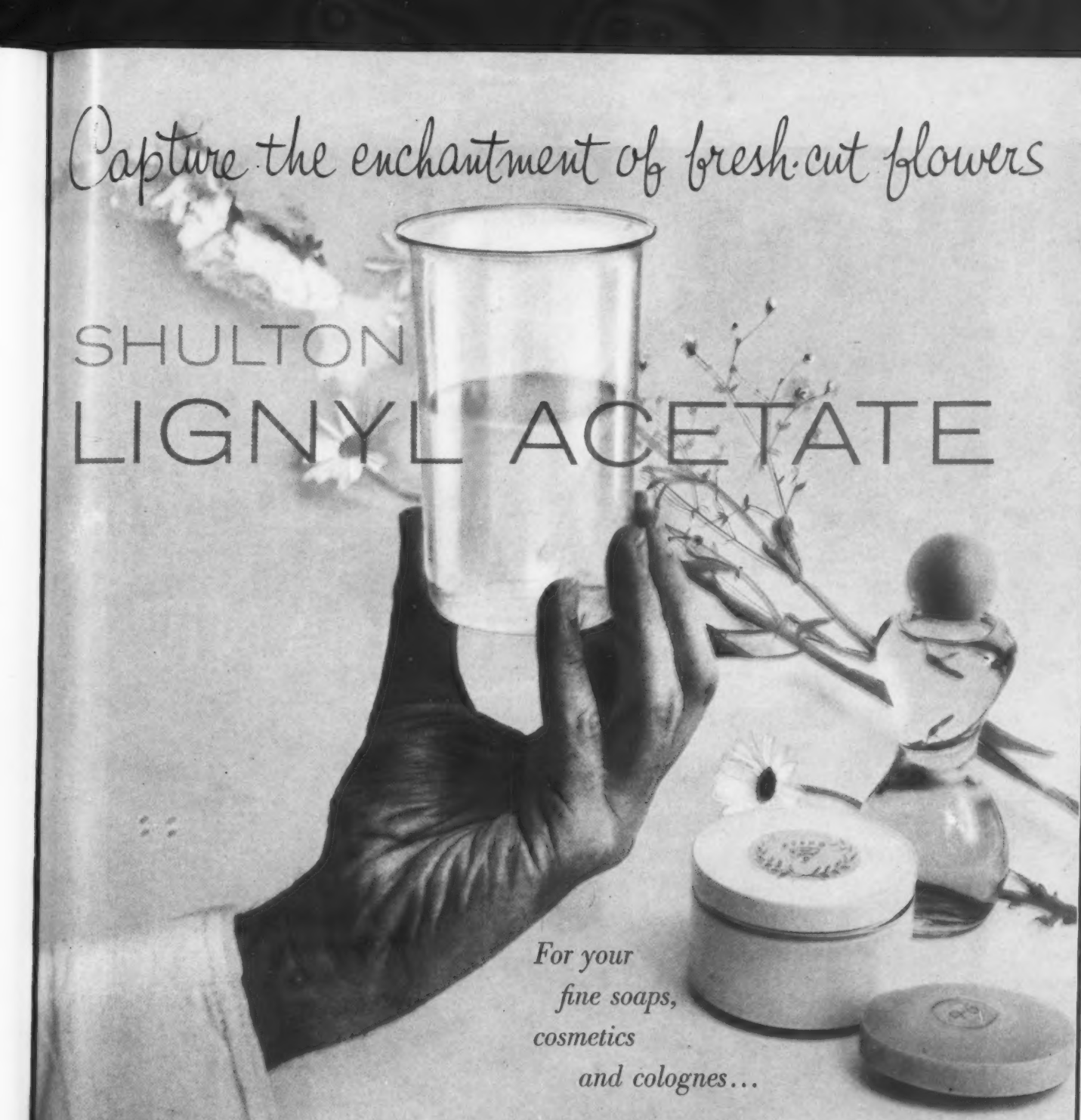

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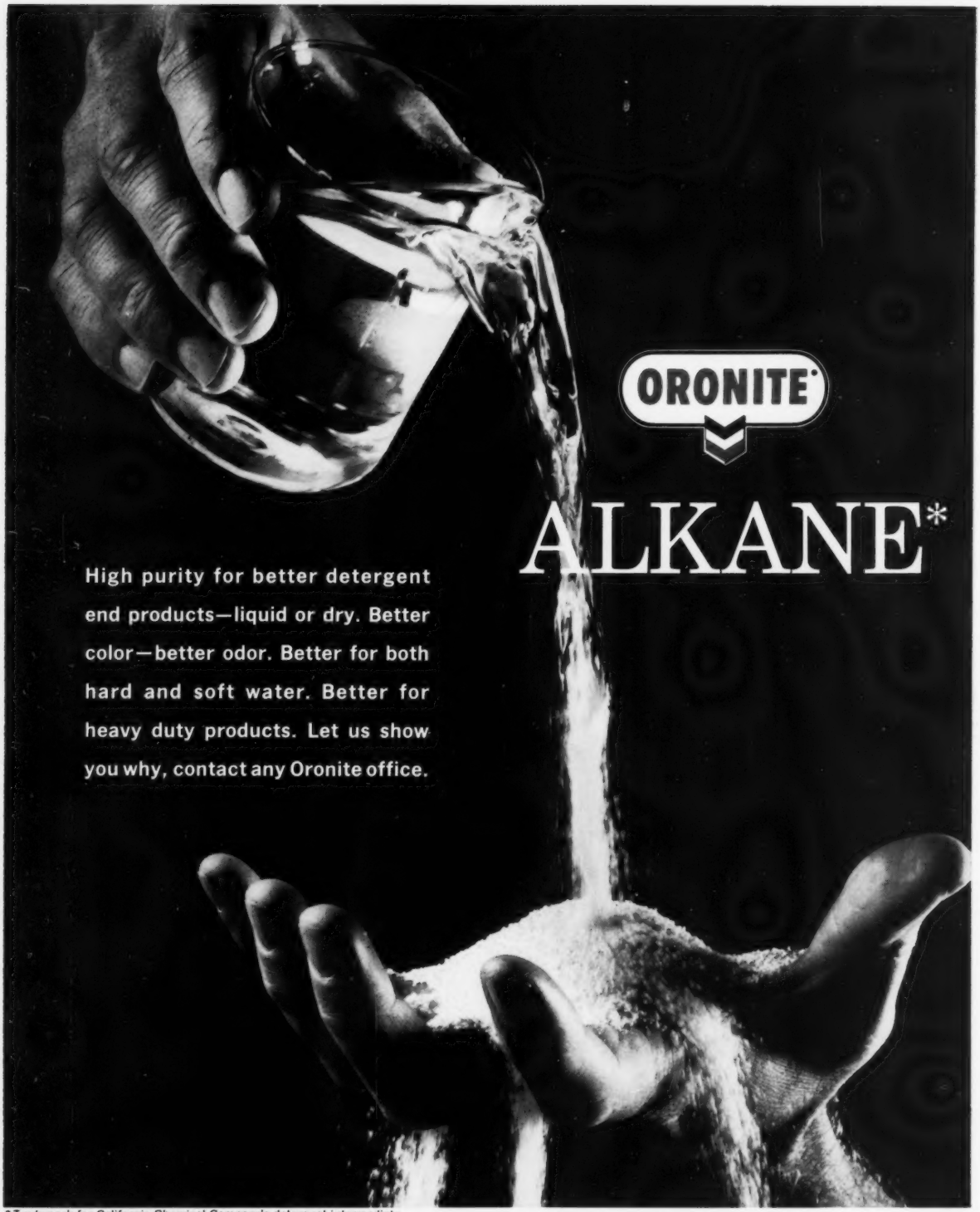
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AFTER CLOSING---

Soap Industry Convention Preview

ADVANCES in detergent technology will be examined by a panel of experts at the 35th annual convention of the Association of American Soap & Glycerine Producers, to be held at the Waldorf-Astoria Hotel, New York, Jan. 24, 25, and 26. Other highlights of the program include reports and analyses of changes in consumer habits and attitudes and their impact on the marketing picture.

The steering committees of the Industrial Division and of the Glycerine Division will meet concurrently, Wednesday morning, Jan. 24. A combined divisions' luncheon will be presided over by John M. Hoerner of Armour & Co., Chicago, association president. The Annual Glycerine Awards and the Fatty Acid "Veteran's Award" will be presented at this session.

General meetings of the Fatty Acid Producers' Council and the Industrial Division will be held concurrently Wednesday afternoon, Jan. 24. A panel session on "Building Markets for Industrial Products" is tentatively planned to follow the Industrial Divison's general meeting. A session of the Technical Advisory Council and a joint meeting of the Information and the Public Relations Committees are scheduled for that afternoon.

Wednesday evening at 5:00 P.M. there will be a reception and cocktail party at which *Soap and Chemical Specialties* will be host.

"Trends in Materials and Product Development" is the title of Thursday (Jan. 25) morning's panel sesssion of which William Bright of Lever Brothers Co. is scheduled to be moderator. G. E. Hinds of Continental Oil Co's Petrochemical Department, Englewood, N. J., will speak on "'Alfol' Alcohols - 'Alfene' Olefins." A speaker from California Chemical Co's Oronite Division, New York, will present a paper on "Alpha Olefins". "Surfactant Structure" will be spotlighted by R. D. Swisher of Monsanto Chemical Co., St. Louis, Mo., and "Amides and Hydrotropes" will be discussed by Arnold H. Dater, Ultra Chemical Works, Inc., Paterson, N. J. E. J. Black of Stepan Chemical Co., Northfield, Ill., will speak on a subject yet to be announced. Reid W. Malcolm, Jr., of Olin Mathieson Chemical Corp's organic chemicals division, New York, will contribute a paper on "'Poly-Tergents'-Ethylene Oxide Condensates." The panel session will be concluded by Emil Vitalis of American Cyanamid Co., New York, speaking on "Sequestering Agents".

Leo Cherne of Research Institute of America, Inc., will speak at the luncheon session, Jan. 25; his subject: "A Look Ahead on the Economic and Political Fronts.

A general session is scheduled for Thursday afternoon, Jan. 25. at which David Justice of Lever Brothers Co. will present his report as chairman of the Technical Advisory Council Steering Committee. A contribution dealing with the role of soap and water cleanliness in radio-active decontamination is tentatively set for Thursday afternoon. Spencer Valmy of Colgate-Palmolive Co. will report on Consumer Cleanliness promotion. Thursday's (Jan. 25) events will be concluded by the Maid of Cotton Fashion Show.

Friday morning, Jan. 26, will be devoted to a general session at which D. B. Melnicoff of Fels & Co., Philadelphia, may preside. Theme of the session is "New Light on Consumer Habits and Attitudes". Hugh L. Rusch of Opinion Research Corp., Princeton, N. J., will discuss "Important Human Relations Factors in Business and Industry". Mr. Rusch will be followed by Herbert R. Mayes of *McCall's* and James O. Peckham of A. C. Nielsen Co., Chicago, who will speak on subjects yet to be announced. A speaker from the U. S. Department of Commerce is expected to contribute to this program.

Friday's luncheon address will be delivered by William Wood Prince, chairman of the board of Armour & Co. Presiding at the luncheon session will be George Lesch of Colgate-Palmolive Co.

Luncheon will be followed immediately by the association's annual business meeting which will hear the treasurer's and manager's reports. The nominating committee will present its report and from its slate members will elect directors for 1962. The board of directors will then hold a meeting.

The convention will conclude Friday evening with the annual reception, cocktail party and banquet.

★

Ultra Names Friedman

Ultra Chemical Works, Inc., division of Witco Chemical Co., New York, recently annouced the appointment of S. K. Friedman as manager of product planning and application. He is responsible for the analysis of market potentials

S. K. Friedman

and the commercial development of new products.

Mr. Friedman, who joined Witco in 1957, was advertising manager of the firm prior to the appointment by Utlra.

—★—

Plans Naphthalene Plant

Standard Naphthalene Products Co., South Kearny, N.J., subsidiary of Standard Chlorine Chemical Co., recently announced acquisition of a seven and a half acre tract, including a 20,000 square foot manufacturing facility in Toledo, O. Plans call for its immediate conversion into a modern naphthalene processing plant. Full production of naphthalene is scheduled for the first of the year, the company reports.

—★—

Antara Advances Hyatt

Robert C. Hyatt was recently named general manager of Antara Chemicals Division of General Aniline & Film Corp., New York. He was formerly director of marketing for the division.

Mr. Hyatt joined the corporation in its Central Research Laboratories at Easton, Pa., in 1950, and was later appointed sales engineer of Antara direct sales. In 1957 he was named product manager, surfactants, and manager of administration on the staff of the general manager of the Dyestuff and Chemical Division in 1959. He later became director for marketing for Collway Pigments Division of the chemical group.

R. C. Hyatt

Macon Joins Hooker

Ralph Macon recently joined the international division of Hooker Chemical Corp., New York,

Ralph Macon

as project manager, international development. He will be headquartered in New York.

Since 1952 he had been associated with Atlantic Refining Co., Philadelphia, as manager of market and product development. Previously he had been supervisor for market and product development at Pennsalt Chemicals Corp., Philadelphia.

He is a member of the Chemical Market Research Association, American Chemical Society — Division of Marketing and Economics and Commercial Chemical Development Association.

—★—

Continental Chemical Move

Continental Chemical Co., Paterson, N. J. manufacturere of surface active agents and chemical specialties, recently acquired a new plant at 270 Clifton Blvd., Clifton, N. J. Manufacturing and laboratory facilities have been tripled in size, and plant and tank storage of raw materials and finished products volume is between 50,000 and 75,000 gallons. General offices, quality control and research laboratories are centrally air conditioned. Manufacturing sections are three stories high to provide for gravity feed operations. A six car railroad siding facilitates bulk shipment of finished products as well as receiving raw materials. The siding runs directly into the loading area which is at truck level height.

—★—

Washburn Offers New Resin

Good flexibility, water resistance, color acceptance and penetration control are claimed for a new acrylic-vinyl terpolymer, recently introduced by T. F. Washburn Co., 2244 N. Elston Ave., Chicago 14. Films 5 mils thick, cast from the new resin have a distensibility factor of up to 300 per cent, according to Linus O. Smith, Washburn's president.

Trade-named "Flex-A-Pol", the material and its performance characteristics are described in a new bulletin available from Washburn.

—★—

Du Pont Ups Hobaugh

Edwin B. Hobaugh was recently named to the newly created position of product manager for lawn and garden chemicals in the industrial and biochemicals department of E. I. du Pont de Nemours & Co., Wilmington, Del. He is responsible for market evaluation of the product line and for both current and new products.

Mr. Hobaugh joined the purchasing department of the company in 1941, and since 1951 has been working in agricultural sales administration. He was sales control manager for agricultural and garden products for seven years prior to his new assignment.

Edwin B. Hobaugh

Oronite Ups Stayner

Oronite Division of California Chemical Co., San Francisco, recently anounced the appoint-

R. D. Stayner

ment of R. D. Stayner as sales manager for surface coatings and plastics chemicals. He was previously eastern sales manager for Oronite Industrial Chemicals, headquartered in New York.

Mr. Stayner joined the division in 1957 as a product specialist in industrial chemicals following 11 years' experience at California Research Corp., in exploratory research and product development involving a number of products presently marketed by California Chemical Co.,

—★—

New Dura White Waxes

Availability of three new grades of hard white waxes for the chemical processing industry was announced early this month by Dura Commodities Corp., 20 Vesey St., New York. "Duroxon J-324 H" and "Duroxon J-324 V-H" are specially decolorized additions to the firm's standard emulsifiable grades, "J-324" and "J-324 V." The third new addition is "Duron White 195," a microcrystalline, brightstock, hard wax.

The two "Duroxon" grade waxes are designed for use in polymer type floor finishes. They are offered as premium grades and sell for three cents a pound above the pale yellow "J-324" and "J-324 V" emulsifiable grades.

"Duron White 195" is being offered as a low cost quality hard wax to sell for 17 cents a pound delivered on non-returnable pallets in Boston, New York, Philadelphia and Chicago.

—★—

SAACI Christmas Party

"Christmas in Little Old New York." is the theme for the Christmas Party of the Salesmen's Association of the American Chemical Industry (SAACI), to be held Dec., 13, in the grand ballroom of the Waldorf-Astoria Hotel. The grand door prize will be a 1962 "Falcon" automobile.

—★—

Florasynth Elects Stein

Florasynth Laboratories, Inc., New York manufacturer of flavoring and perfume raw materials, recently annouced the election of Nat Stein as secretary of the firm. Mr. Stein, associated with the company for 15 years, was formerly assistant secretary and controller.

—★—

Ultra Names Ritter

Ultra Chemical Works, Inc., a subsidiary of Witco Chemical Co., New York, recently announced the appointment of Robert E. Ritter as sales manager of its industrial chemicals division. He is responsible for the sales and distribution of Ultra's bulk detergent chemicals to manufacturers of industrial and chemical specialty products. Formerly eastern district sales manager of Ultra's industrial chemicals division, Mr. Ritter joined the company in 1955.

Robert Ritter

GAF Names Shelton

Election of Harold G. Shelton to the new position of executive vice-president in charge of op-

Harold G. Shelton

erations for General Aniline and Film Corp., New York, was announced recently. Mr. Shelton, formerly vice-president and group executive of the firm's chemical group, will direct all operating groups and divisions. This includes Ansco, Ozalid, Antara Chemicals, General Dyestuffs Co., Collway Pigments divisions and the international group.

Dr. C. C. Schulze, formerly general manager of Antara Chemicals Division, succeeds Mr. Shelton as group executive for chemicals. Francis A. Gibbons, also an executive vice-president, was placed in charge of administration.

—★—

CIBS Elect Voit

J. William Voit, George Lueders & Co., New York, was elected president of the Cosmetic Industry Buyers & Suppliers Association (CIBS) for 1962, at the association's November 9th meeting. Other officers elected for 1962 are: first vice-president, Eugene M. Roberts, Lanvin Perfumes, Inc., New York; second vice-president, Horatio R. Roger, Colgate-Palmolive Co., New York; corresponding secretary, Howard Kaneff, Ar-Kay Printing Co., New York; recording secretary, George Luby, Avon Products, Inc., New York; and treasurer, Robert J. Roberts, Emery Indus-

tries, Inc., Cincinnati. Elected to the board of governors were: Dallas D. Roush, Owens-Illinois Glass Co., Toledo, O., and Harold Anderson, H. Kohnstamm & Co., New York.

—★—

Stepans Give to Notre Dame

Alfred C. Stepan, Jr., and his wife Mary Louise have donated $350,000 to the University of Notre Dame, it was announced by the Rev. Theodore M. Hesburgh, president of the university. The gift is intended to pay towards a center for concerts and convocations, which will seat 3,000.

Mr. Stepan is the founder and head of Stepan Chemical Co., Northfield, Ill., manufacturer of surface active agents, detergents, and related specialty chemicals.

A 1931 graduate, Mr. Stepan is a member of Notre Dame's associate board of lay trustees. Three of his seven children are graduates of Notre Dame.

—★—

New Rust Remover

A fast acting chemical rust remover was introduced recently by Sloan Chemicals, Inc., Caxton Building, Cleveland 15. Applied to the ferrous metal surface by brush, "Aci-Gel" is said to do its rust removing job within a few minutes. It is then flushed off with water.

Formulated with a thixotropic gelling agent, "Aci-Gel" adheres to vertical surfaces until it is flushed down.

The product is marketed in five and 15 gallon polyethylene lined metal pails and drums. Price and use information is available from Sloan.

—★—

Witco Ups Two

Appointments of G. Thomas Catherines as advertisting manager and Robert Lanino as assistant advertising manager were announced recently by Witco Chemical Co., New York. Mr. Catherines was formerly assistant advertising manager for Witco, and Mr. Lanino had been associated with the sales department of the textile chemicals division of Sonneborn Chemical and Refining Corp., a Witco division.

German Detergents Law

Bio-degradability of household detergents is the target of recent legislation by the German Federal Parliament.

Purpose of the law is to enforce the highest possible degree and rate of biological degradation of surface active agents and synthetic detergents used in laundry and cleaning compounds.

The new law empowers the Federal Government to legislate standards pertaining to the biodegradability of detergents in laundry and cleaning formulations and to stipulate methods for evaluation of these products. Standard requirements must be "commensurate with the current status of detergent science and technology and with the capacity of sewage treatment plants."

The Federal Government must publish the first pertinent regulations not later than June 30, 1962.

Laundry and cleaning compounds containing synthetic detergents may not be marketed by manufacturers or importers if their degradation characteristics do not comply with the standard requirements. Exempt are samples for experimental use and laundry and cleaning compounds in transit through Germany or intended for export.

—★—

New Corrosion Inhibitor

A new corrosion inhibitor for use in aqueous aerosol systems has just been introduced by Wasco Laboratories, Box 11, Vernon, N. J. "Korex C" is effective both at acid and alkaline pH, water soluble and sufficiently soluble in alcohol to give protection in most systems, Wasco claims. It is said to prevent corrosion in sodium chloride containing systems.

"Korex C" inhibits undesirable changes due to reduction and oxidation processes in iron and tin containers, according to the manufacturer. While an 0.1% addition is usually adequate, Wasco suggests tests to establish optimum requirements for each system.

The inhibitor has a pH of about 7.0 in a 1% aqueous solution. Prices run from $3.50 to $2.75 per pound, f.o.b. plant, depending on quantity.

Forms Chemical Firm

Monaco Chemical Industries, 161 East 42 St., New York, has been organized to specialize in the distribution of heavy industrial chemicals, agricultural chemicals, industrial insecticides and pharmaceutical compounds.

Principals of the new firm are John R. Stoddard, formerly vice-president in charge of sales for Prentiss Drug & Chemical Co., New York, and Ernest W. Rivers, formerly manager of the industrial chemical products department of Stauffer Chemical Co., New York. The phone number is OXford 7-6939.

John R. Stoddard

Ernest W. Rivers

Make Your Cosmetics Win Every Screen Test With This Safe, Sure Sun-Screening Agent

All summer long, your suntan preparations will be subjected to penetrating "screen tests". Made with Sunarome, they'll make top scores every time. This superbly adaptable sun-screening agent by Felton effectively screens out the sun's harmful rays between 2900 and 3100 angstrom units, allowing just enough of the actinic rays to reach the skin for attractive tanning. Sunarome will not irritate the skin; will not stain fabrics; is not affected by perspiration; is stable under practical conditions of use; will not hydrolize; will not discolor creams and lotions; is compatible with aerosol propellants. Easy to use and economical. Felton Chemical Company, Inc., 599 Johnson Avenue, Brooklyn 37, New York.

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SALT CAKE

Low cost, versatile builder for detergents, cleansers and chemical specialties. Sodium Sulphate anhydrous, 99% Na_2SO_4 minimum. Grades: Papermakers', industrial and Syndet.

SODA ASH

A dependable source of alkali for industrial detergents and cleaning compounds. Sodium carbonate, technical 58% Na_2O. Grades: granular and fine granular.

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quality... uniformity and the lowest possible cost!

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Completely compatible with chlorine

Removes discoloration from all synthetic fabrics yellowed from aging or exposure

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Miranol's new series of Sulfonated Amphoteric Surfactants offer significant advantages in the formulation of a wide range of liquid heavy duty compounds for laundry and industrial cleaning.

In a laundry compound, Miranol Sulfonated Amphoterics have the remarkable quality of removing discoloration from synthetic fabrics, whether spun or filament, and mixtures that have yellowed from aging and exposure.

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- ✔ EXCEPTIONAL FOAMERS
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sodium tripolyphosphate
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You can get Hooker caustic soda, caustic potash, and carbonate of potash in 30 different forms and grades.

Such variety gives you maximum flexibility in meeting your processing needs.

You save on shipping costs, too, because two or more of these consistently uniform alkalies can be ordered *together* in mixed carloads or mixed truckloads. One order, one billing, one responsibility—cuts buying and bookkeeping.

Your process requirements may have reached the point where a change in alkali form, grade or strength will spell savings for you. Our representative knows the economics of these alkalies. He can relate to your needs the most advantageous of 10 different forms and grades of caustic soda, 13 forms and grades of caustic potash, and 7 forms and grades of carbonate of potash. Just write the nearest Hooker sales office.

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Your customers insist on *consistency* in the detergents you make for them . . . and consistency is a quality you can depend on when you standardize with Hooker phosphates.

Sodium tripolyphosphate is one of our specialties. This Hooker phosphate is 98% pure. It flows freely. It's available in three forms: spray-dried granular (30% more bulk without additional weight), regular granular, and powder.

Hooker sodium tripoly is made by our Phosphorus Division. You're invited to write to the Division's headquarters at Jeffersonville, Ind., for more information on this product.

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Hooker tetrapotassium pyrophosphate has high sequestering power. Formulated into your heavy-duty liquid detergent, it has the power to dig in deep to draw out dirt. No matter how badly soiled an article, dirt can't be redeposited or adhere to cleaned fabrics.

Solid form assays 99.0% $K_4P_2O_7$ and is available in granular and powder forms. Also available as a 60% solution.

Hooker TKPP doesn't vary in quality. It's compounded from phosphoric acid and caustic potash, both made by Hooker, specialists in phosphorus and potassium chemistry.

Our TKPP data sheet will give you more complete technical information. Just check the coupon.

For more information, check off data sheets you want and mail this coupon with your name, title and company address.

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☐ Caustic potash ☐ Tetrapotassium pyrophosphate
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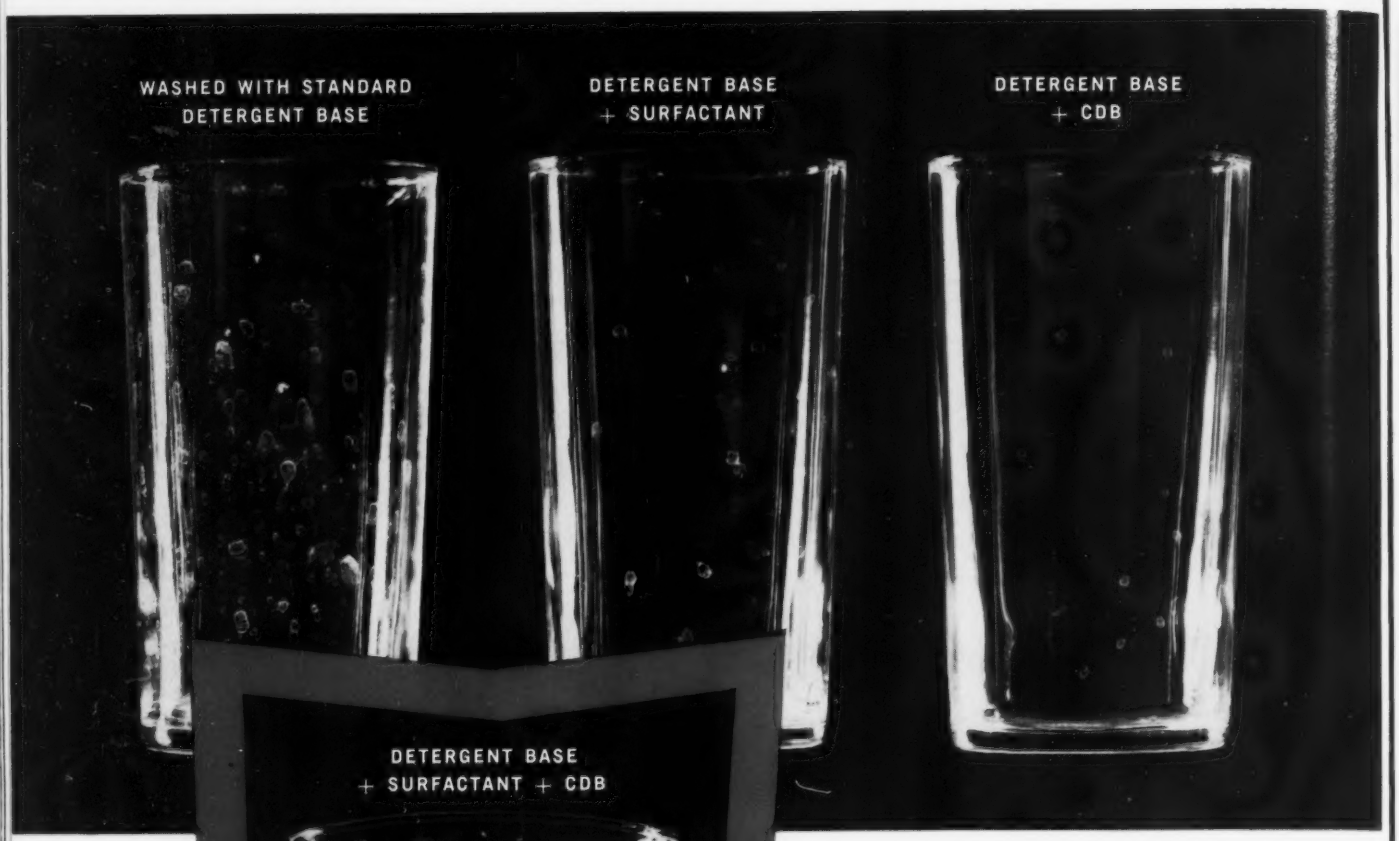

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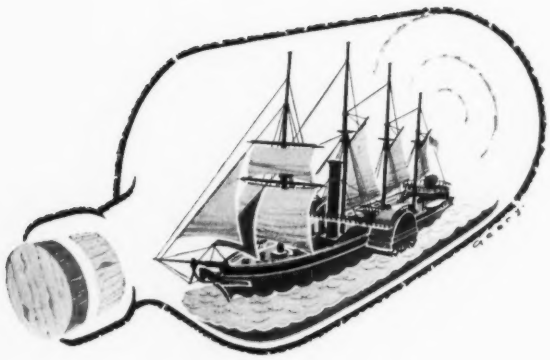

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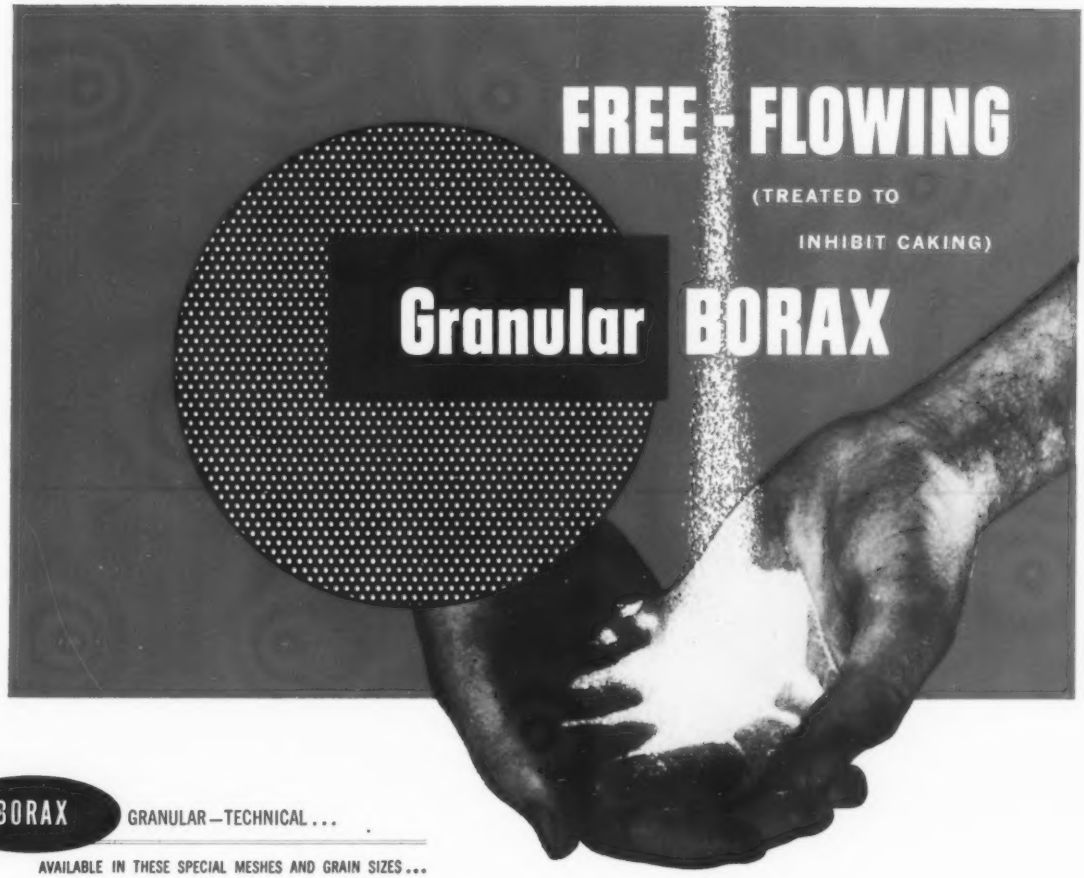

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Granular 30/60 (Special Mesh)	+ 30 + 60	0.5% 69.8%	+ 30 +100	max. 1% min. 80%
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Granular 30/80 (Special Mesh)	+ 30 + 80	0.8% 76.6%	+ 30	max. 1%
Granular 30/100 (Special Mesh)	+ 30 +100	Nil 86.7%	+ 35 +100	none min. 85%
Granular 40/100 (Special Mesh)	+ 40 +100	Nil 89.0%	+ 40 +100	max. 0.5% min. 88%
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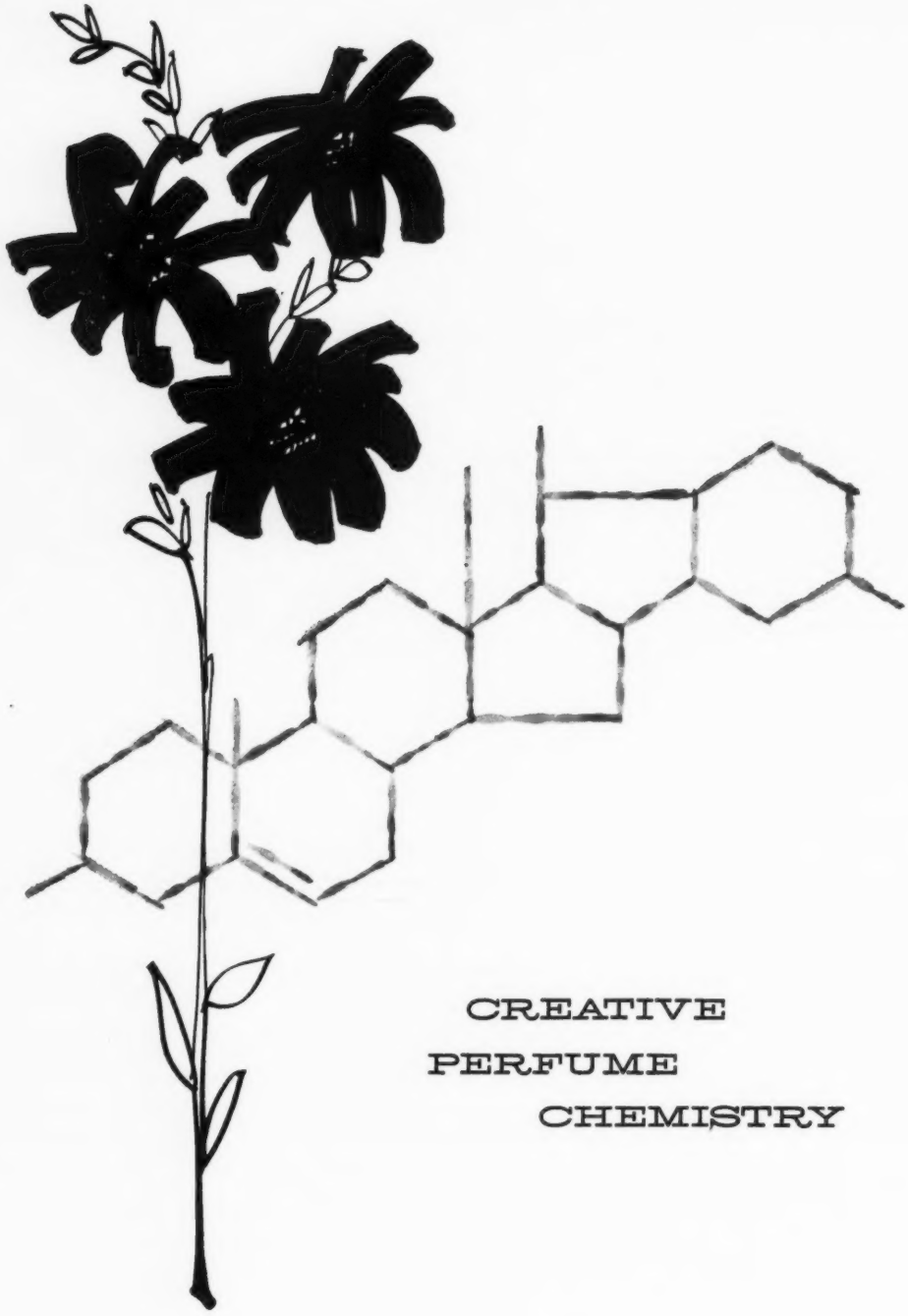

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Glassware and dishes drain sparkling clean after being washed with Alipal CO-436 and rinsed... this detergent par excellence is a good soil and lime-soap dispersant and, at the same time, completely water soluble. ■ Flash-foaming and easy on the skin too... used in bubble baths and shampoos as well as in dishwashing detergents. It is also suggested for washing hard-waxed surfaces (cars, linoleum floors, countertops) because it cleans efficiently but removes very little wax. ■ Alipal CO-436 is available from warehouses located nationally. Discover why some of the most highly promoted light-duty, liquid household detergents are based on this surfactant or compounded with it. For a free sample of Alipal CO-436 and a copy of booklet AP-66, write Dept. S-33.

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Titre, °F.	131.0–132.0	39.2–42.8
Color 5¼" Lovibond Red*	0.3 max.	1 max.
Color 5¼" Lovibond Yellow*	1.0 max.	10 max.
% Unsaponifiable		1.5 max
Saponification Value	209–211	198–203
Acid Value	208–210	197–202
% F.F.A. as Oleic Acid		99 min.
Iodine Value (WIJS)	0.25 max.	94 max.
Refractive Index 50°C. (Av.)		1.4500

* 1" cell for GROCO 4

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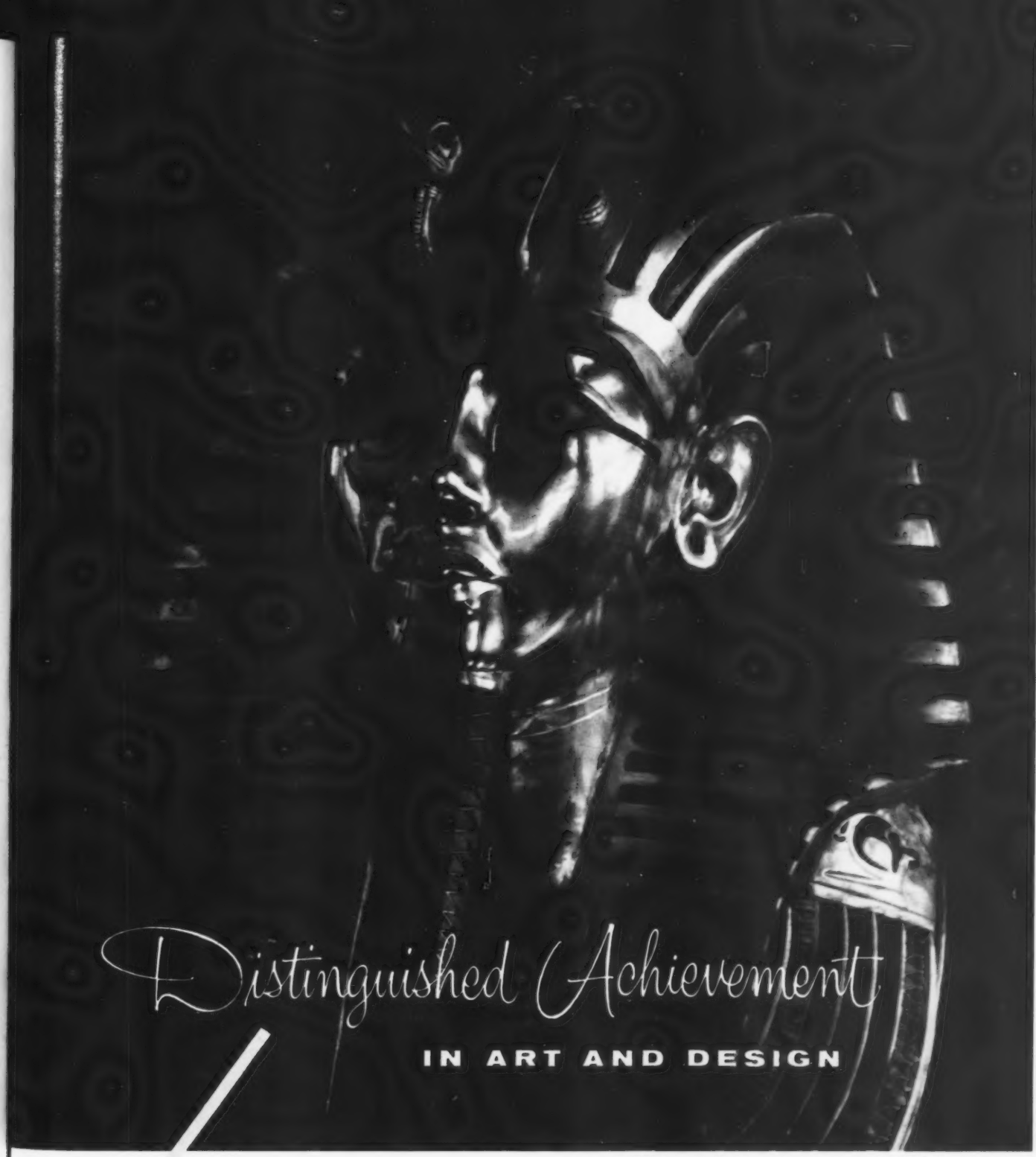

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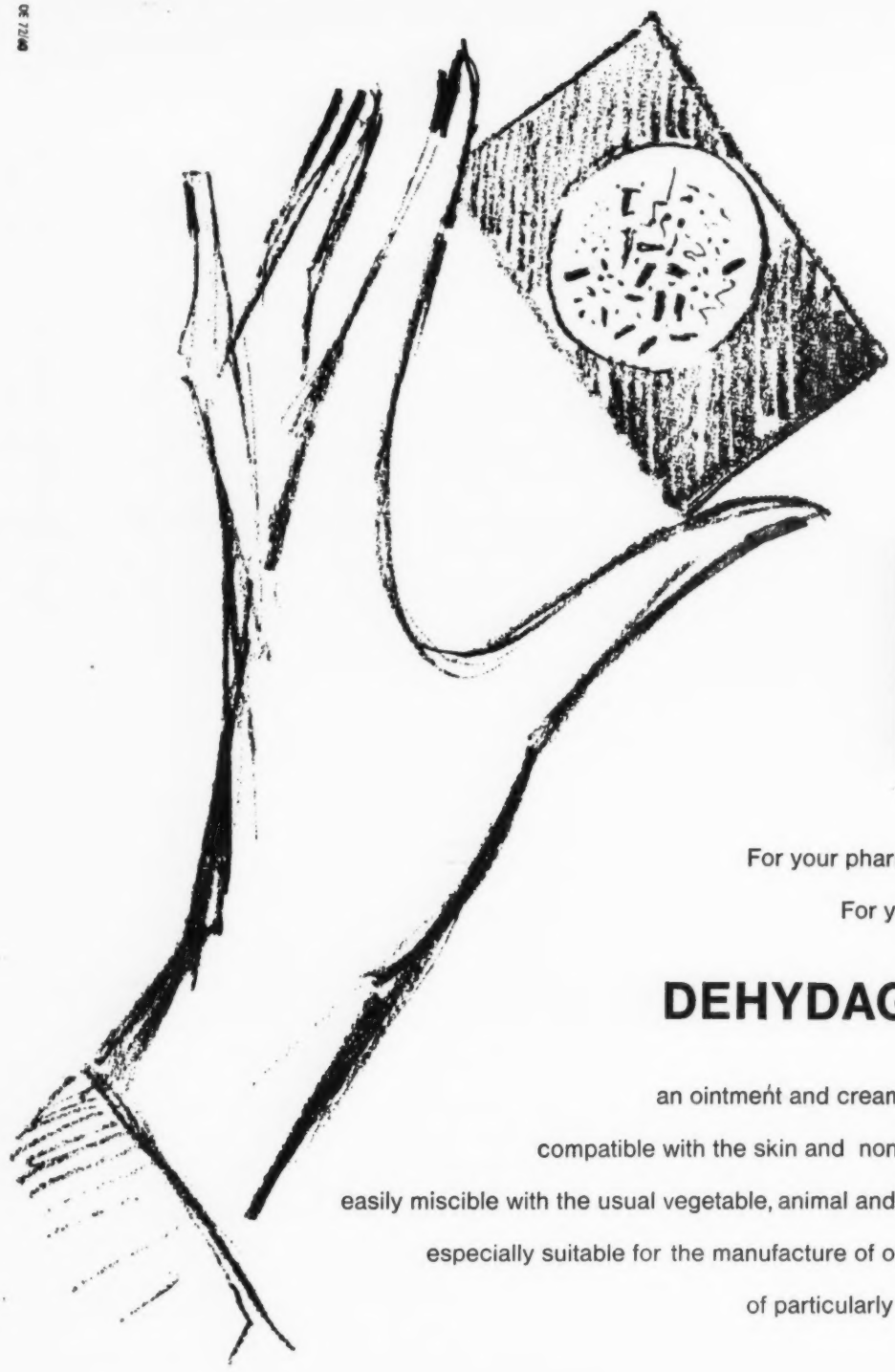

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- They inhibit rusting of steel containers

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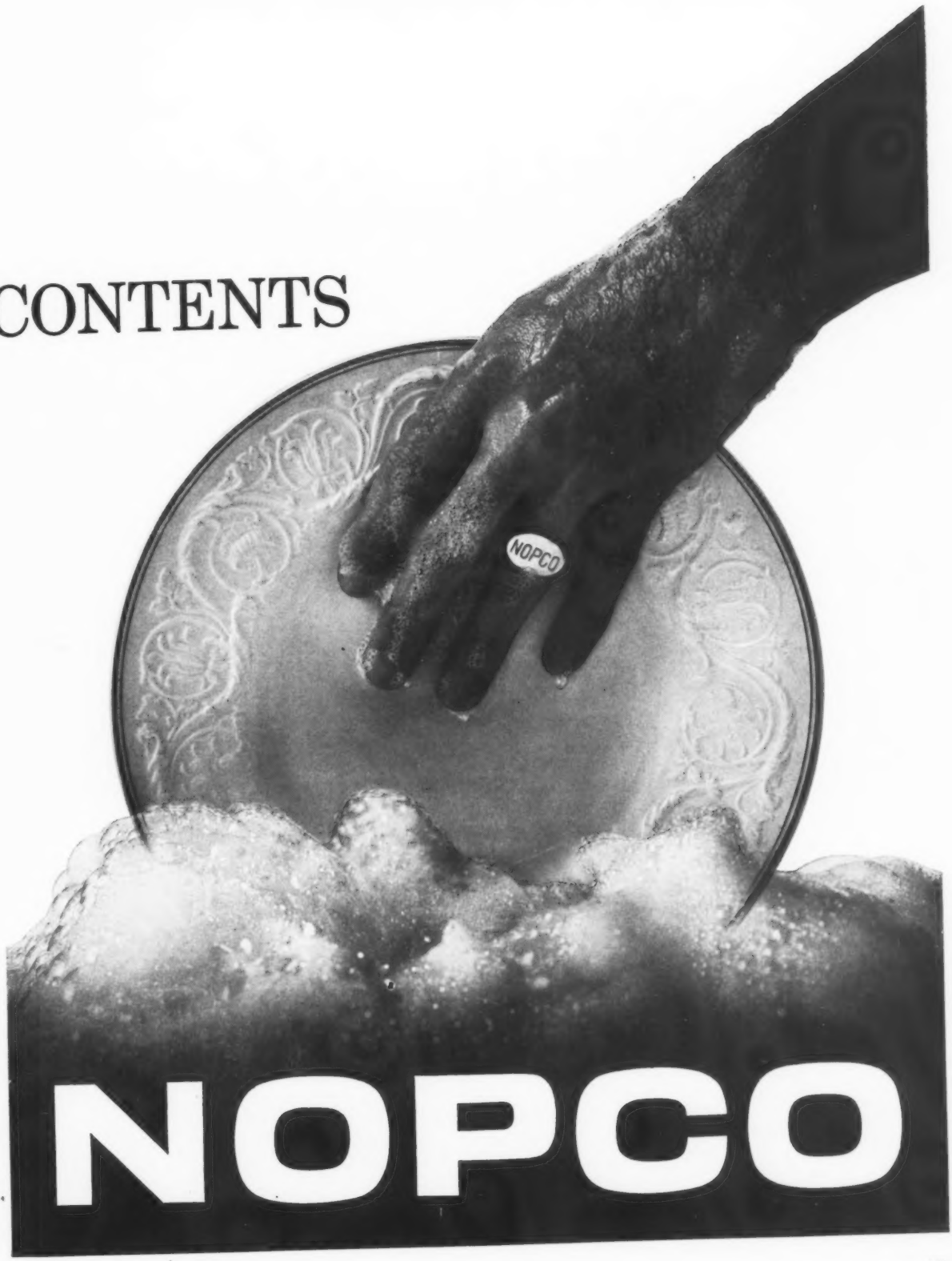

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Miracle of the Pine

Silently, unrelentingly, the Southern Pine labors to produce a key ingredient for your household cleaner

by Joan March Worden

To many of us, the words "pine tree" evoke memories of a forest of green and the refreshing fragrance of pine—an appeal to the sense of smell as distinct as nature itself and as subtle as jasmine.

"Pinus Palustrus," the long leaf pine, is found all across the southern United States. And it is in this pine tree that most of the world's pine oil originates.

After the tree has been cut down, the stump builds up a rich storehouse of pine oil.

When nature has completed this part of the job, man takes over.

Long used in industry for its cleaning and disinfecting value, pine oil now plays that same role in new consumer products—today's modern pine household cleaners.

Pine oil in a cleaner does more than give a room a fresh, woodsy aroma. Pine oil makes a good cleaning product much more efficient. It's a universal cleaner for everything from venetian blinds to kitchen cabinets.

Used in proper quantity, pine oil gives quick, effective cleaning action. Still higher percentages make the product useful for sanitation purposes and as an antibacterial agent. A cleaner with a high percentage of pine oil will kill germs of many communicable diseases.

It's nice to know that a surface not only looks clean but is also hygienically clean.

You may wonder, as I did, just how pine oil works.

With it, pick up dirt and floats it around so that water can sweep it away. Pine oil helps powerful and fast solvent action. It actually dissolves grease, wax, and many other stains that are so hard to remove.

Where cleanness is a "must," pine oil is the answer. All around the house, pine oil can be used for all work, cleaning away at whatever needs cleaning—floors to ceiling and everything in between.

In the laundry, pine cleaner is a big help, releasing dirt and keeping wear and tear on clothes at a minimum. Imagine how useful it can be in the nursery—which should be clean, germ-free and sweet smelling all at once.

Pine oil will work outdoors as well. Paintbrushes, cars, and even dogs can be pine-washed—in different quantities, of course.

Today thousands of reputable companies all over the world manufacture pine cleaner products for consumers. Pine oil is so widely used in cleaners that it's available everywhere.

The companies that make these pine products have technical staffs that design the product for the job to be done.

Some are tailored for specific uses, such as disinfecting and deodorizing.

Others, like most of today's pine cleaners, are all purpose. Incidentally, although most of these cleaners are made in liquid form, some are of the powder or jelly type and others are packaged as aerosols. No matter what form the cleaning product takes, read the label to be sure it contains pine oil—the hard working nature product that makes your household cleaners so much easier.

Joan March Worden is director of the Pine Cleaner Information Center, 205 East 42nd St., New York 17, N. Y., an educational organization currently sponsored by Hercules Powder Company, Wilmington, Delaware, manufacturers of pine oil.

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	60L	60%	High	Clear, pale yellow	60.0%	Liquid detergents, wet textile processing shampoos, car wash, household detergent formulations, janitorial supplies.
	35KX	35%	Medium	Clear, pale yellow	31.5%	Liquid detergents and household cleaners, wet textile processing, emulsion polymerization, post stabilizer for emulsions.
Slurries	35K	35%	High	Pale yellow	31.5%	Drum-dried and spray-dried cleansing compounds, light and heavy-duty liquid detergents.
FLAKES	DS	100%	Medium	Light, cream colored	90%	Industrial detergents, emulsifier, dry mixing with alkalies, air entraining agent.
	K	100%	High	Light, cream colored	90%	Industrial detergents, heavy-duty household detergents, emulsifier, dry mixing with alkalies.
	K Dense	100%	High	Light, cream colored	90%	Same as above.
	KX	100%	Medium	Light, cream colored	90%	Same as 35KX in dry form.
	KX Dense	100%	Medium	Light, cream colored	90%	Same as KX—except smaller particle size with increased density, air entraining agent.
BEADS	SK Bead	100%	High	White, free flowing	40%	Light-duty household detergents, dry mixing with alkalies.
	SK Bead High Density	100%	High	White, free flowing	40%	Same as above—synthetic wool washes, air entraining agent.

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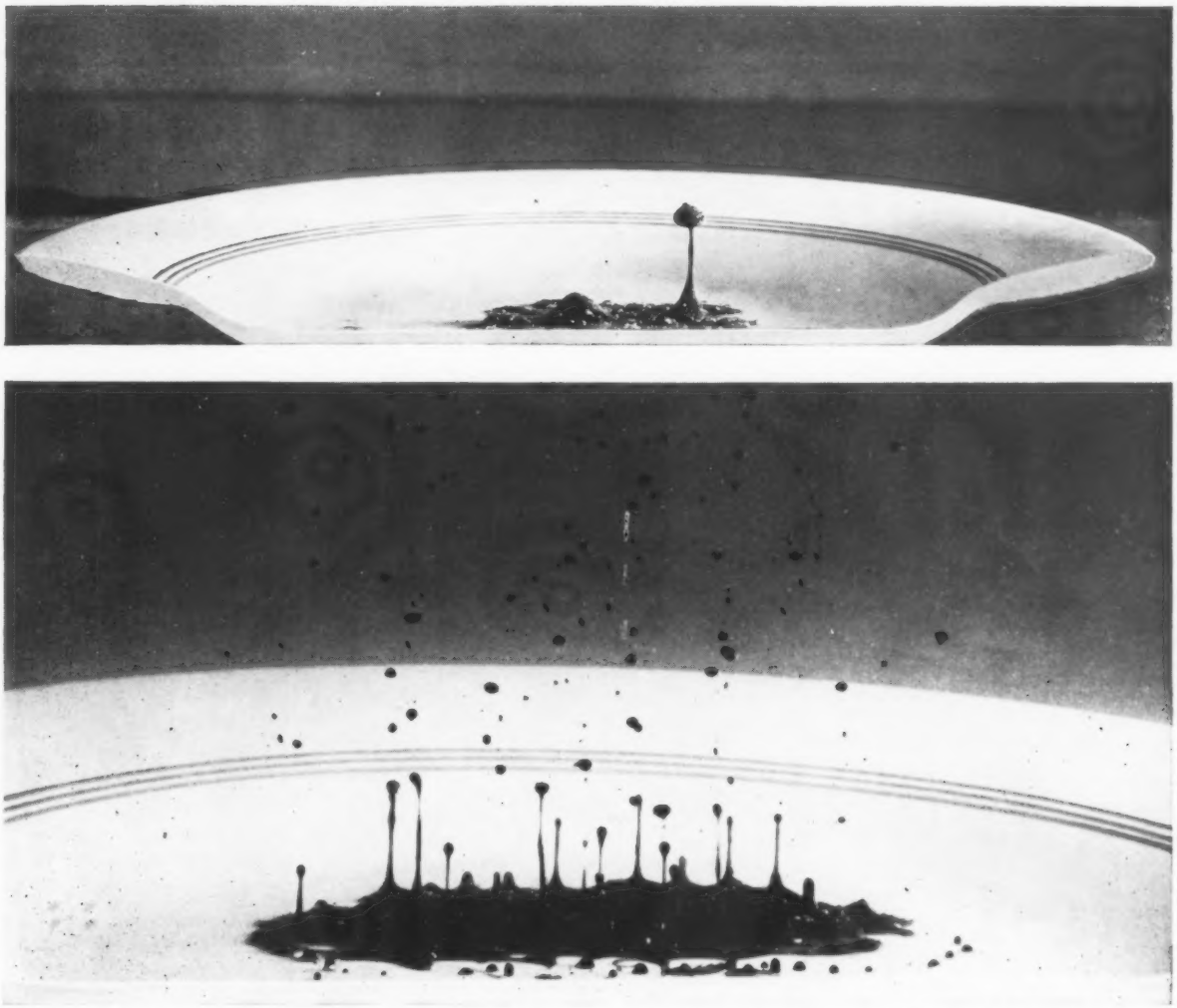

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And with Ultra's unusually broad range of specialized alkyl aryl sulfonates, amine condensates, xylene and toluene sulfonates and other surfactants at your disposal, you'll have no trouble finding the sales-building combination of detergency, foaming power, viscosity, solubility and other properties you desire. Physical forms? Choose from powders, flakes, beads, gels and liquids.

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Plants in: Paterson, New Jersey, Chicago, Illinois, Hawthorne and Los Angeles, California.

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as the editor sees it...

DETERGENT SIZES

Bottle and carton sizes and weights have become something of a hot potato during the past few months. Going on the theory that all manufacturers are out to trim the public, most of these alleged consumer protective groups and some government officials as well seem to direct their activities on this basis. If a manufacturer puts out a package of unusual weight, say 26½ ounces, his purpose *per se* must be to gyp the buyer. Whether he may have a sound reason for such a size, possibly for production or competitive reasons, is not considered. If it's an odd size, the marketer is a crook, — and that's all there is to it.

Now we agree that competition is a tough task-master and that goes for package sizes as well as price. Everybody who is human wants his package to look like the most for the money. But sometimes, we feel that some manufacturers become a bit too cute in their selection of package sizes. They are apparently blinded to everything but competition. And with government prodded on by professional consumer groups, each trying to outprod the other, we wonder if it's the time to be too smart competitively. The whole package size situation has become a complex puzzle. Now might be the time to give it some deeper thought before some government eager-beaver jumps the traces and tries to "regulate" it by law.

* * * * *

DISINFECTION

A report by two English doctors concerning an epidemic of boils in a children's hospital and its eventual control through widespread disinfection of the premises and all equipment gives pause for some serious thought. In the process of getting the epidemic under control, it appears that just about everything except the patients was disinfected. Beds and linen, walls, floors, dishes, equipment, — everything and anything which could carry a live organism was treated. It was in fact, almost a return to the days when hospitals everywhere reeked of old-fashioned coal-tars. And mixed in well in the disinfection was the generous use of cleaning agents. But the fact remains that the epidemic was brought under control and kept under control.

Knowing that the majority of modern men of medicine shrug off disinfectants and disinfection, we wonder if this is done with due cause or is primarily a pose, a sort of "disinfectants went out with bustles, Bud,—today, antibiotics are the style." After the experiences of the past few years in hospitals everywhere, it would seem that disinfectants have taken on a new respectability which had been lost two or three decades ago, lost as far as the medical profession was concerned. Undoubtedly, the character and quality of disinfectants marketed today vary widely from their predecessors of years ago when fraudulent products were as numerous as fleas on a hound. In spite of recent transgressors who have been giving USDA enforcement officials a tough time, overall quality improvement has been great. We wonder if the medical profession is fully aware of this situation.

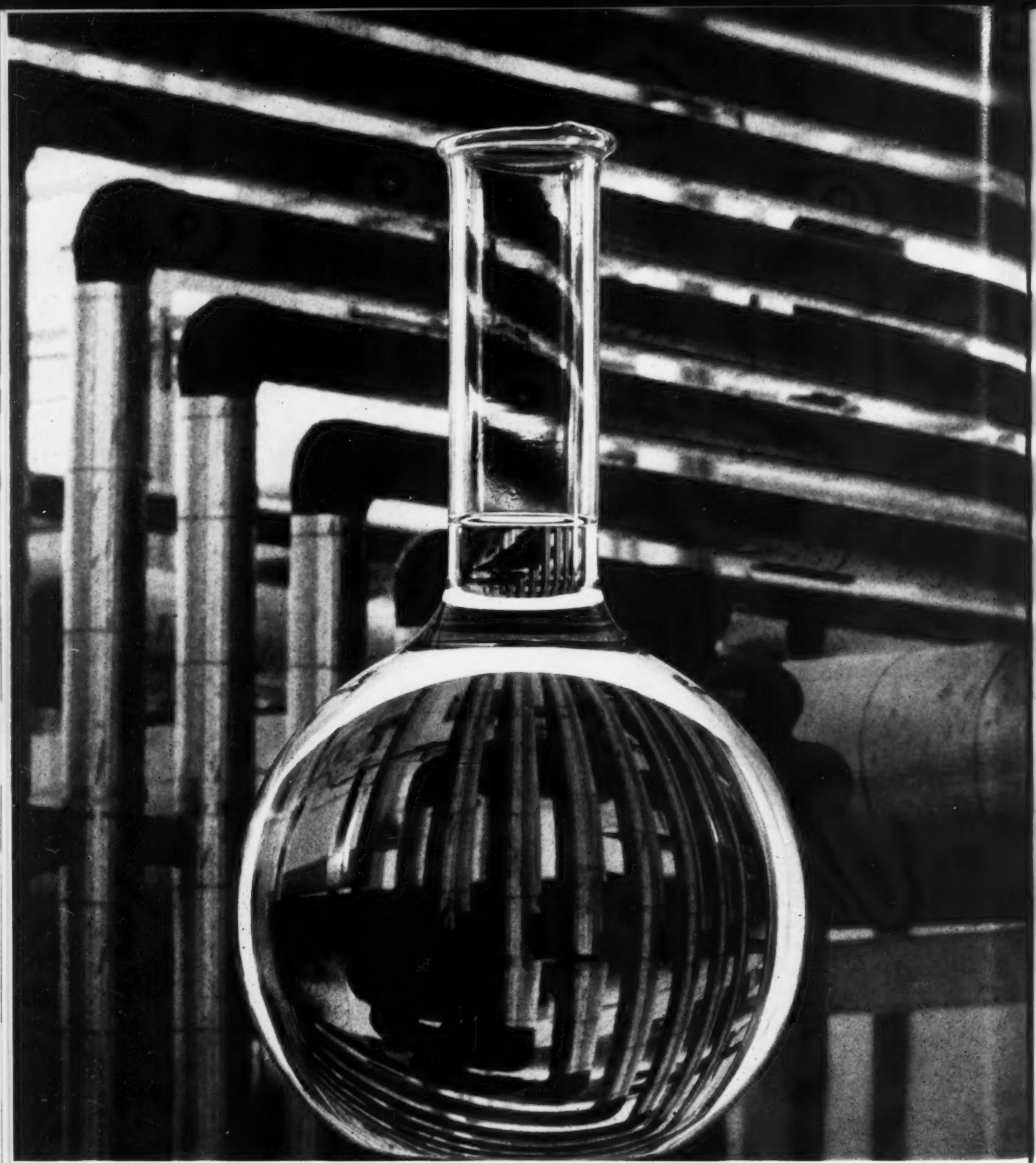
* * * * *

LABELING . . . AGAIN

Time grows short for all manufacturers of chemical specialties whose products are covered by the Federal Hazardous Substances Labeling Act to make sure that labels are in accordance with the law and the regulations. The law, which is now in effect, will be enforced by February 1, 1962. Although there is a remote possibility the enforcement date of the Act may be extended for another year, the chances of Congress passing legislation to allow the Food and Drug Administration to grant such an extension now seem small.

To avoid trouble with FDA, necessary changes in labels should be made now in order that shipments of products to retail markets for sale after the first of the year be protected.

Affected manufacturers should,—if they have not done so already—, read both the law and the regulations to determine how they apply to



Chemical Treating Facilities at Arizona's Springhill, La. plant through a flask of ACINTOL® FA3 Fatty Acid.

ARIZONA TAKES THAT EXTRA STEP TO BRING YOU THE LIGHTEST FATTY ACID AT ITS PRICE

Even after fractionation, Arizona takes special steps to produce the lightest color fatty acids available in their price range. Through a separate and unique chemical treatment in special process equipment, Arizona now offers the highest quality fatty acids.

New ACINTOL® FA 3 Fatty Acid is the best example of the power of special chemical treatment and increased distillation. It's the palest, purest product in its price range. Specially tailored to soap industry needs, ACINTOL FA 3 is low in unsaponifiables, high in fatty acid content. In short, the perfect economical replacement for oleic acid.

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their products. This is a responsibility that cannot be passed on to anyone else including the Chemical Specialties Manufacturers Association. Obviously, it is imposible for CSMA to review all labels of individual manufacturer members.

To emphasize the importance and seriousness of this new law, it should be pointed out that virtually every aerosol product now on the market will probably have to be relabeled. No mere warning statement included in the directions will suffice. Specific type sizes for warning statements of hazard must appear on the front panel of the product, with suitable explanation elsewhere on the container.

FDA may grant some exemptions, but, again, don't count on them. Not only is the process of applying for an exemption involved and time-consuming, but good and explicit reasons for granting exemptions are a must.

Finally, don't forget that FDA has the power to inspect plants to see that the law is complied with, and to seize products that are already on the market if they are not labeled correctly. Although it is expected FDA may be lenient on goods now on store shelves, anything shipped after the first of January will be subject to close scrutiny.

* * * * *

PACKAGE DESIGN

Aerosol package design "when it is good is very, very good, but when it is bad is absolutely awful" a top Canadian industrial designer remarked recently. The reason why bad design is a serious problem, he pointed out, is that it not only affects the sale of the product with a poor label, but that such labeling can have other, more far-reaching consequences. He cited the case of three pressure packages entered in a packaging competition. Two were charcoal lighters, the other a fire extinguisher. All three had a flame motif on the label. Should a fire extinguisher and a fire lighter be stored side by side in a closet, a child, for example, reaching for a fire extinguisher might be confused and pick up the wrong product. The point is one that every aerosol marketer might well ponder, and — more important — do something about. Not only should the label be a "silent salesman" in the supermarket where the product is sold, it should also tell what the product is at a glance.

NET WEIGHT

Where should the net weight marking of detergent or soap package appear? The rules of the National Conference of Weights & Measures Officials adopted last June state that it should go on the "principal" panel of the package. But the Soap Association has pointed out that probably a more logical and conspicuous place for the net weight statement is on the top panel of the package "adjacent to the price patch." Thus, price and weight may be seen together.

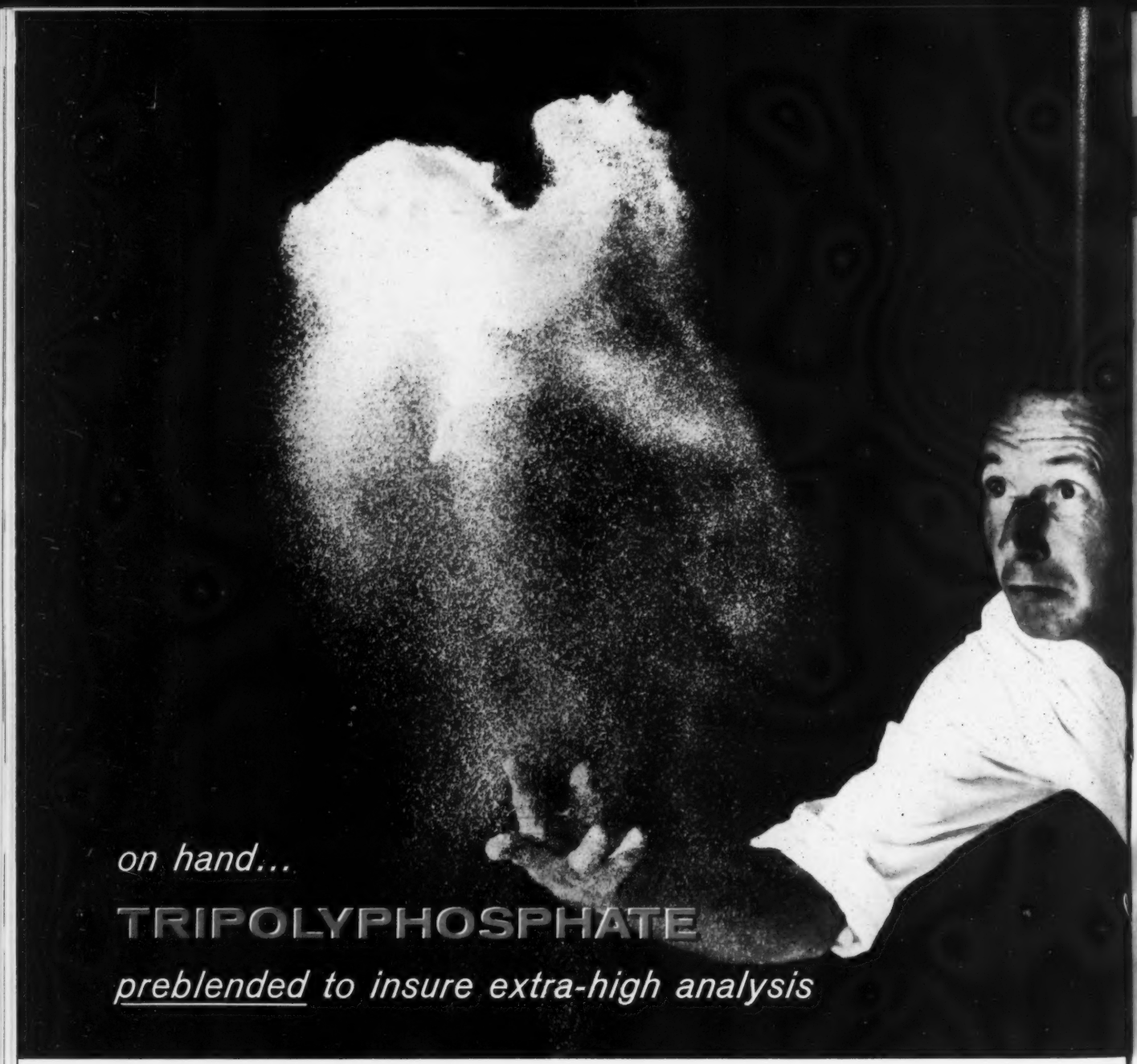
The Soap Association has taken the matter up with the Weights & Measures Conference Officials with a view to having their Model Law revised so that the weight marking may be on the top panel if the manufacturer so chooses. To us this seems like an altogether sensible suggestion which we hope the National Conference will consider favorably.

* * * * *

SMALL COMPANIES

For years, politicians on all levels of the national scene have suffered deep bleeding of the heart for the poor, downtrodden small business man. Vociferous in protecting the interests of the "little fellow," our politicians are indeed quite understandable. There are more little fellows than big fellows. More votes. But while all this heart bleeding goes on, the plight of the small manufacturer of household chemical products, toilet goods, pesticides, what not, becomes more acute. The small firm is being driven slowly crazy by the ever increasing multiplicity of federal, state and municipal laws and regulations.

Now, we do not oppose regulation of industries or products supposedly to protect the public health, — regulation within reason. But we feel the situation is rapidly going beyond the bounds of reason and good horse sense. Some small companies are compelled to avoid selling their products in certain states and certain cities because regulations make it economically impossible for them to sell in these places. If our governments are honestly interested in protecting and assuring the future of small business, then we feel they should take stock of what they are doing. Slowly but surely, they could kill off small business. All this while the Department of Justice trains its guns on the big fellows for anti-trust violations. You might as well give up, Hector, you can't win!



A new process is used to make AA Quality Sodium Tripolyphosphate. It includes a special operation that preblends the reactants before calcining. You benefit from the extra detergent strength that is developed and carried through to the finished product.

You also benefit from a free-flowing uniformity. It comes from the careful control built into thoroughly modern spray drying and calcining units. Send for production samples of this new "Tripoly" now!

Top detergent quality in every granule...

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as the reader sees it...

Addendum

Editor:

We have the pleasure in referring to the September 1961 issue of *Soap and Chemical Specialties*. In this issue, under section "Products and Processes," you published two separate developments and/or processes, for both of which this company and its affiliated company in Western Europe were responsible. In particular we are referring to the paragraphs headed "Antifungal Foot Spray" and the subsequent item headed "Improved Bubble Bath."

As far as the antifungal foot spray is concerned, the publication appears to be re-printed from the West Germany trade journal *Seife, Fette, Oele, Wachse*. It might interest your readers that the undecylenic alkylolamides which are mentioned, are a most important new class of fungicidal and bacteriostatic agents developed by our West German associated company, REWO Chem. Fabrik G.m.b.H., Steinau, Kreis Schluchtern, Hessen.

These products are highly recommended not only for foot preparations but for general applications as skin and scalp sterilants, characterized by extremely low toxicity and extreme mildness toward the skin. These products can, as a result of extensive clinical tests carried out in various countries, be regarded as an almost natural or biological type of sterilant. They are more fully described in extensive information brochures, issued by ourselves and REWO. Copies are available to any of your readers interested in this important new class of sterilants.

It might also interest your readers to know that several patent applications for these derivatives are on file in a number of European countries and the United States. The undecylenic alkylolamides, of which several different types are being offered, both of oil as well as water-soluble grades, can be supplied either from our United Kingdom or West German works in bulk, with a minimum of delay in shipment to the United States.

As regards the second item, headed "Improved Bubble Bath," this refers to the British patent of our company and covers "Improvements Relating to Detergent Compositions" (U.K. patent 1818158. Your mention is a reprint of a publication which appears in the *Schimmel Briefs* of June 1961. Unfortunately, in the original *Schimmel Briefs* there occurred a serious error in the quantities given and this has inadvertently been reprinted in *Soap and Chemical Specialties*.

The figures for triethanolamine lauryl sulfate given appeared originally in the *Schimmel Briefs* as 30 parts of a 40 per cent active product. In other words, there would only appear to be 12 parts of 100 per cent active material present. This, of course, is contrary to the claims as contained in our patent and is based on a misunderstanding of the wording of our patent. What was meant was that 30 parts of triethanolamine lauryl sulfate *(100 per cent* active material) should be used, but that in practice the triethanolamine laurvl sulfate employed was based on 40 per cent active matter. In other words, all *parts* shown in the formula should be regarded as a *100 per cent* active matter.

W. B. Reinisch
Managing Director
Dutton & Reinisch, Ltd.
London S.W. 7, England

We are indebted to Mr. Reinisch for furnishing us with the additional information on these two products. We should point out that the word "sterilant," which appears several times in his letter, should be understood by American readers as "disinfectant." Ed.

—★—

The "ideal insecticide" being held aloft by George Hartz of Prentiss Drug & Chemical Co., New York, has the properties of low cost, quick, effective kill and lack of toxicity. George referred to this "new," non-resistant insecticide during the course of an otherwise serious address on his firm's new insecticide, "Butonate," before the fourth annual meeting of the Canadian Manufacturers of Chemical Specialties Assn. in Toronto, last month.

Patent References

Editor:

I receive your publication, *Soap and Chemical Specialties*, regularly and take a great interest in it.

I feel I should let you know that two references to British patents on pages 161 and 163 of the June, 1961 issue were incorrect.

Attached to my letter are two references shown in the June issue of *Soap and Chemical Specialties* and the actual titles of the British patents, corresponding to these references.

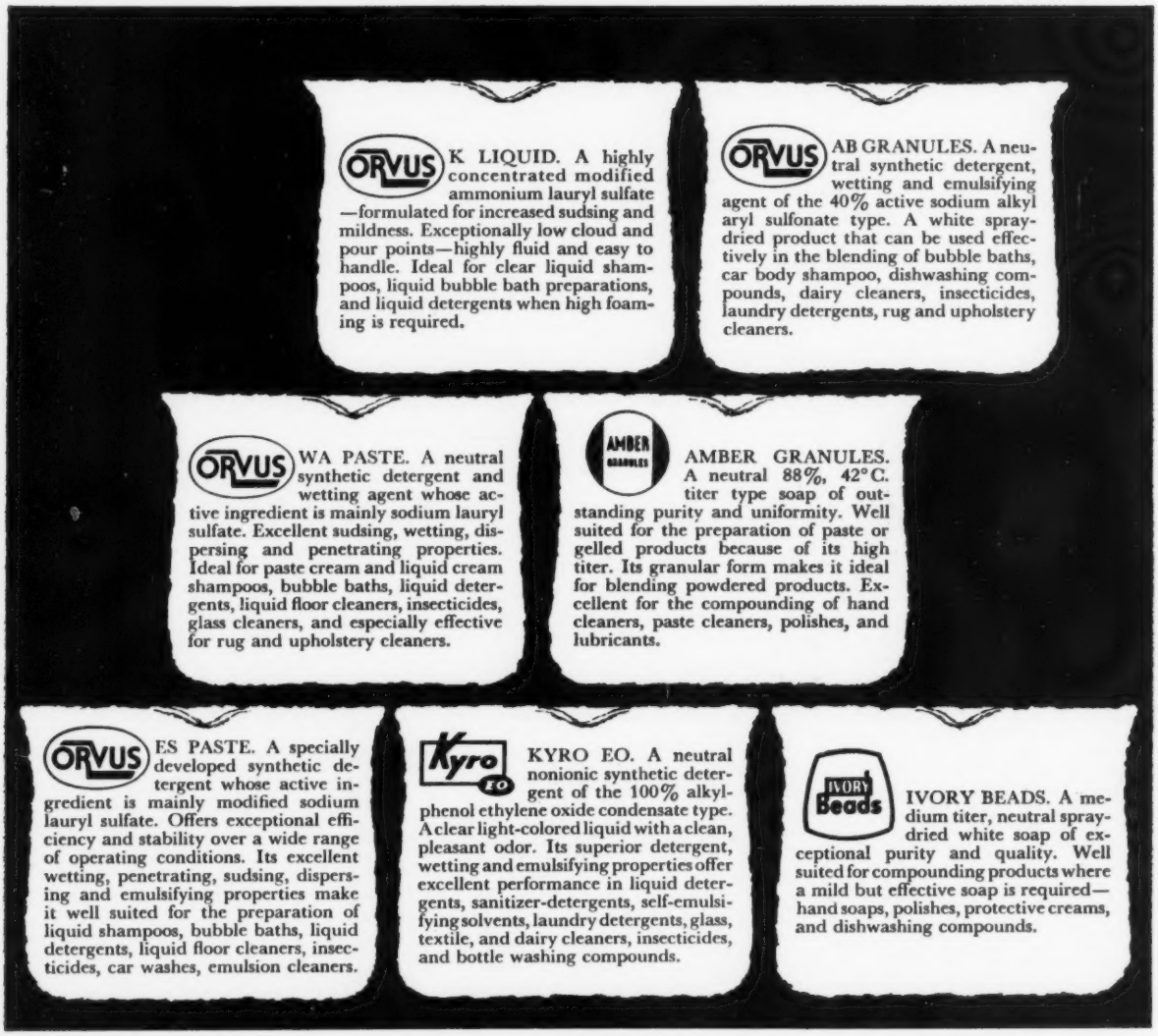
I would appreciate your letting me know the correct references to the patents you mentioned.

Madame O. Benoit
Applications Laboratory,
Progil,
Lyons, France

To Madame Benoit, our apologies for typographical errors which escaped our proofreader. The correct references are: "Liquid Detergent Compound, British patent No. 846,504," and "Low Foaming Liquid, British patent No. 849,711." Ed.

How to make sure of Successful Formulation

1. Use Procter & Gamble products
2. Use Procter & Gamble formulation assistance


ORVUS K LIQUID. A highly concentrated modified ammonium lauryl sulfate —formulated for increased sudsing and mildness. Exceptionally low cloud and pour points—highly fluid and easy to handle. Ideal for clear liquid shampoos, liquid bubble bath preparations, and liquid detergents when high foaming is required.
ORVUS AB GRANULES. A neutral synthetic detergent, wetting and emulsifying agent of the 40% active sodium alkyl aryl sulfonate type. A white spray-dried product that can be used effectively in the blending of bubble baths, car body shampoo, dishwashing compounds, dairy cleaners, insecticides, laundry detergents, rug and upholstery cleaners.
ORVUS WA PASTE. A neutral synthetic detergent and wetting agent whose active ingredient is mainly sodium lauryl sulfate. Excellent sudsing, wetting, dispersing and penetrating properties. Ideal for paste cream and liquid cream shampoos, bubble baths, liquid detergents, liquid floor cleaners, insecticides, glass cleaners, and especially effective for rug and upholstery cleaners.
AMBER GRANULES
AMBER GRANULES. A neutral 88%, 42°C. titer type soap of outstanding purity and uniformity. Well suited for the preparation of paste or gelled products because of its high titer. Its granular form makes it ideal for blending powdered products. Excellent for the compounding of hand cleaners, paste cleaners, polishes, and lubricants.
ORVUS ES PASTE. A specially developed synthetic detergent whose active ingredient is mainly modified sodium lauryl sulfate. Offers exceptional efficiency and stability over a wide range of operating conditions. Its excellent wetting, penetrating, sudsing, dispersing and emulsifying properties make it well suited for the preparation of liquid shampoos, bubble baths, liquid detergents, liquid floor cleaners, insecticides, car washes, emulsion cleaners.
Kyro EO
KYRO EO. A neutral nonionic synthetic detergent of the 100% alkylphenol ethylene oxide condensate type. A clear light-colored liquid with a clean, pleasant odor. Its superior detergent, wetting and emulsifying properties offer excellent performance in liquid detergents, sanitizer-detergents, self-emulsifying solvents, laundry detergents, glass, textile, and dairy cleaners, insecticides, and bottle washing compounds.
IVORY Beads
IVORY BEADS. A medium titer, neutral spray-dried white soap of exceptional purity and quality. Well suited for compounding products where a mild but effective soap is required—hand soaps, polishes, protective creams, and dishwashing compounds.

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Detergents . . . Cleansers . . . Soaps . . .

Entrance to new headquarters offices of Purex Corp. in Lakewood, Calif., features wide reflecting pool that enhances attractiveness of the unique architectural design of the building. Story and other pictures of the new Purex headquarters building appear on page 68.

Aerosols
Detergents
Dishwashing compounds
Floor scrubs
Glycerine
Hand cleaners
Laundry soaps
Liquid soaps
Medicinal soaps
Metal cleaners
Potash soaps
Scouring cleansers
Shampoos
Shave products
Soap powders
Starch
Steam cleaners
Textile detergents
Toiletries
Toilet soaps and other detergent and soap products

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SALES OFFICES IN MAJOR CITIES

AOCS Session on Detergents

New information on surfactant micelle formation, new methods for detergency evaluation, novel process for making alkylolamides presented in Chicago.

IMPORTANCE of the solvent medium to micelle formation of all types of surface active agents; methods of detergency evaluation; new manufacturing methods and detergent raw materials; the role of water hardness in soil redeposition – these were some of the subjects under examination at the detergents session of the American Oil Chemists' Society. The session, held Nov. 1, was part of the group's 35th Fall Meeting which convened in Chicago, Oct. 30 and 31 and Nov. 1.

The mechanism of micelle aggregation in aqueous solutions of cationic surface actice agents was discussed in a paper entitled "Coacervation in Aqueous Cationic Soap Solutions", by Irving Cohen and Tony Vassiliades, Polytechnic Institute of Brooklyn, Brooklyn, N. Y.

Several long chain quaternary ammonium salts, in dilute aqueous solutions, separate into two solution phases, upon the addition of simple electrolytes such as NaCl, $NaNO_3$ and Na_2SO_4. This phenomenon, which has been described in the literature is classified a form of simple coacervation, involving a single micellar poly-ion species. Dr. Cohen and his coworkers studied the light scattering, viscosity and diffusion properties of a number of these systems as a function of simple electrolyte concentration. The investigation was aimed at finding an explanation why this phenomenon occurs in some cationic solutions and not in others.

Cationic soap systems, which form coacervates showed the following distinctive characteristics as compared to non-cocacervating cationic soap systems, Dr. Cohen reported:

a) The micellar solute species is one of relatively low charge density;

b) The addition of electrolyte to the system produces a tremendous growth of the micellar species prior to two phase formation, in many cases larger than a one hundred-fold increase as compared to the salt free solution;

c) The phenomenon of two-phase formation in these cationic soap systems shows a pronounced specificity to the anion and a lesser sensitivity to the cation of the added electrolyte. This specificity may be qualitatively correlated to the ionization properties of the micellar species in the presence of added electrolyte.

d) A relatively narrow electrolyte transition range may be described for each of the coacervating systems, intermediate between zero electrolyte concentration and the critical electrolyte concentration necessary for two phase formation, in which a radical reorganization of the soap micelle occurs. Light-scattering, viscosity and diffusion data indicate that for electrolyte concentrations below the electrolyte transition range, the soap micelle is isotropic – for electrolyte concentration in excess of the electrolyte transition range, the data is consistent with a cylindrical rod shaped micellar solute particle.

"The Role of Water in Micelle Formation", by H. B. Klevens, of M-K Research and Development Co., Pittsburgh 13, Pa., dealt with the importance of water as a solvent in influencing micelle aggregation by anionics.

Copious data are available on critical micelle concentration (cmc), on the effect of surfactant structure and environmental factors upon micelle formation and various methods of cmc determination have been developed, the speaker reported. This pool of knowledge now makes it possible to suggest a number of roles played by water molecules in micelles formation, he said.

According to Mr. Klevens, we are beginning to understand the structural nature of water molecules in various natural and synthetic polyelectrolytes and in other polymers.

By analogy one can suggest the possible structure of the water molecules in the vicinity of the charged or polar portion of the surfactant molecule and of the micelle, Mr. Klevens believes. The contribution of simple ions to the formation of micelles can be seen to be made up of changes in the ionic atmosphere of the micelle and in the manner in which water molecules are held in this environment, the speaker reported.

In addition, the effect of chain length of corresponding series surfactants on the cmc, suggests that the paraffin chains are also involved with the solvent water molecules. The speaker then postulated a mechanism of water-surfactant interaction.

Nonionics are comparatively little affected by electrolytes, according to a paper presented by M. J. Schick of Lever Brothers Co.,

Edgewater, N. J. Dr. Schick spoke on "Effect of Electrolytes on Micellar Properties of Nonionic Detergents."

The effect of uni-univalent electrolytes on the micellar properties of polyoxyethylene nonylphenols, containing 15 or 50 ethylene oxide units was investigated. Their effect was studied as a function of electrolyte concentration and as a function of the lyotropic number of the ions by means of surface tension and light scattering measurements at 25.0°C., Dr. Schick reported. An increase in the electrolyte concentration was found to result in a decrease of the critical micelle concentration (cmc) and an increase in micellar molecular weight or aggregation number.

A decrease in the lyotropic number of the cation, from lithium chloride to trimethylammonium chloride, or of the anion, from sodium thiocyanate to sodium fluoride, results in a decrease of the cmc and an increase in micellar molecular weight or aggregation number, Dr. Schick said. The effect produced by variations in the lyotropic number of the anions is more pronounced than of the cations. Cloud point determinations are in line with these results; a lowering of the cmc corresponding to a reduction of the cloud point, he pointed out.

Dr. Schick postulated the following mechanism for the addition of electrolytes to nonionic detergents: The solubility of nonionic detergents is a function of the hydration of the ethylene oxide chains. Added electrolyte dehydrates the ethylene oxide chain, which enhances micelle formation and increases the aggregation number. The closeness of the approach of the cation to the ether oxygen is determined by the size of its hydrated form and is partially counteracted by the tendency of the counteranions to be hydrated.

The speaker reported that definite evidence for oxonium ion formation in nonylphenol +15 ethylene oxide units had been observed from measurement of surface tension and surface potential. The cmc or the ionic character is raised by addition of a proton donor, but lowered by a proton acceptor. The surface potential decrease with increasing pH is in line with results reported on alkylethers. It is concluded that the ethylene oxide chains of nonionic detergents in aqueous solutions are strongly hydrated at 25.0°C., and have associated weak positive charges.

Alkanolamides

John A. Monick of Colgate-Palmolive Co., Jersey City, N. J., described a method for "Continuous High Temperature Preparation of Alkylolamides". The conventional batch process requires cycle times of two to six hours, which may lead to undesirable by-products, Dr. Monick pointed out. He then described a method whereby lauric diethanolamide is prepared from methyl laurate and diethanolamine in the presence of an alkaline catalyst by a continuous high temperature process. A thin-film evaporator was used as a continuous reactor.

With a reaction time of approximately 10 seconds and reaction temperature at 149°C. for an absolute pressure range of 10-760 mm.Hg., product purity achieved was 91-94 per cent. When reaction temperature was lowered to 110° C., product purity deteriorated at increasing absolute pressures, Dr. Monick reported.

Two studies were conducted to establish optimum content of either potassium hydroxide or sodium methylate catalyst. Maximum product purity of about 97 per cent was obtained with 0.20% catalyst by weight, the speaker said.

Criteria applied to cleaning textile substrates cannot be directly applied to hard surface cleaning. This was apparent from a paper entitled "Hard Surface Detergency", by A. M. Mankowich, Aberdeen Proving Ground, Md.

The author described a study of hard surface (steel) detergency using glyceryl trioleate, oleic acid and octanoic acid soils with three types of anionic and three types of nonionic syndets. Only potassium laurate showed maximum detergency at the cmc (critical micelle concentration), with the potassium laurate-octanoic acid system being an exception, Mr. Mankowich said. In general glyceryl trioleate and oleic soil removal (180°F) at the cmc was low, not over 40 per cent; octanoic acid detergency at the cmc was substantially higher, 65 to 83 per cent. Considerable differences in removal of the various soils by the same surfactants were found.

A generalization was observed in the detergency of glyceryl trioleate soil — soil removal increased sharply on passing the cmc with increasing concentration until approximately 90 per cent detergency was reached, at which point soil removal began to level off and approach 100 per cent with a much smaller slope, the speaker reported.

Visual observations of the cleaning processes suggested a partial answer for the differences in soil removal. Removal of glyceryl trioleate soil by both anionic and nonionic syndets appeared to be due chiefly to a displacement action caused by preferential wetting of the basis metal. Removal of octanoic acid by the nonionic surfactants in a diffusing cloud of small particles seemed to be due to solubilization followed by emulsification and precipitation of the acid soil.

The investigation uncovered several relationships in two series of analogs (polyethenoxyethers of nonyl phenol and tridecyl alcohol). It was found that the ratio of the HLB (hydrophile-lipophile balance) values of two analogs was approximately equal to the fifth root of the ratio of their cmc values. The correlation held for analogs varying by as much as 15 moles ethylene oxide. A linear relationship was also found between HLB value and the reciprocal of the ethylene oxide mole ratio for the polyethenoxyethers of nonyl phenol.

Speakers at AOCS Detergent Session, seated, left to right: A. C. Zettlemoyer, Lehigh Universsity; Eric Jungermann, Armour & Co., chairman; Albert R. Martin, Whirlpool Corp.; H. B. Klevens, M-K Research & Development Co.; standing: A. Mankowich, Aberdeen Proving Ground; A. J. Stirton, Eastern Regional Research Laboratory; Martin J. Schick, Lever Brothers; L. Cohen, Polytechnic Institute of Brooklyn; J. Monick, Colgate-Palmolive; J. C. Sherill, Armour.

Photo courtesy American Oil Chemists' Society

Performance properties of a comparatively new group of surface active agents were discussed in a paper by A. J. Stirton, R. G. Bistline, Jr., J. K. Weil, Waldo C. Ault, and E. W. Maurer of the Eastern Regional Research Laboratory, U. S. Department of Agriculture, Philadelphia 18. Their contribution was entitled "Sodium Salts of Alkyl Esters of Alpha-Sulfo-Fatty Acids – Wetting Time, Lime Soap Dispersion, and Related Properties."

The speaker recalled that, in a recent investigation, esters of α-sulfonated pelargonic acid, such as sodium heptyl α-sulfopelargonate, $C_7H_{15}CH(SO_3Na)CO_2C_7H_{15}$, had been shown to have exceptional wetting properties. In continuation of this work, to better relate structure with useful properties, a series of esters of 14-19 carbon atoms of the general formula $RCH(SO_3Na)CO_2R'$ were prepared.

Propionic, butyric, pelargonic, lauric, myristic, palmitic and stearic acid were sulfonated in the alpha position with sulfur trioxide and esterified with selected normal primary alcohols, from methanol to hexadecanol. Solubility, critical micelle concentration (c.m.c.), wetting, calcium stability, surface and interfacial tension, foam height, detergency and lime soap dispersion properties were measured.

In general a comparison of position isomers showed that as the grouping containing the hydrophilic portion, $-CH(SO_3Na)CO_2-$, was moved from the center toward either end, cmc and wetting efficiency decreased, surface and interfacial tension increased, and calcium stability and lime soap dispersion properties improved, the speaker reported.

The more symmetrical esters such as sodium hexyl and heptyl α-sulfopelargonate, sodium butyl and amyl α-sulfolaurate, and sodium propyl α-sulfomyristate were found to be excellent wetting agents in distilled water and in hard water of 300 p.p.m. Wetting properties were measured by the Draves test.

Unsymmetrical esters such as sodium methyl and ethyl α-sulfomyristate, palmitate and stearate, sodium tetradecyl α-sulfopropionate and potassium hexadecyl α-sulfopripionate, were good detergents and lime soap dispersing agents, according to this report.

A coconut oil fatty acid forerun (a mixture of caprylic, capric, lauric and myristic acids) was sulfonated with sulfur trioxide vapor and esterified with 2-ethylhexanol. The product, with an average composition corresponding to sodium 2-ethylhexyl α-sulfocaprate, has useful wetting properties in soft and hard water, the speaker said.

The role played by water hardness in soil deposition on cotton was the subject of a paper entitled "The Adsorption of Calcium Ions to Surfactant Films on Cotton", by A. C. Zettlemoyer, J. D. Skewis, and J. J. Chessick, Lehigh University, Bethlehem, Pa.

The adsorption mechanisms of sodium dodecyl sulfate (NaDS) and of sodium dodecylbenzene sulfonate (NaDBS) onto Graphon (a high area graphitized carbon black) had been determined in previous work, Dr. Zettlemoyer recalled. Calorimetric heats of adsorption of the surfactants were also measured using a plastic colorimeter designed to avoid contamination by calcium ions. This work has now been extended to learn the effects of calcium on the Graphon solution interface, he reported.

Radiocalcium adsorption measurements showed that the adsorbed NaDS takes up limiting amounts of one calcium for two DS ions and the chains extend directly from the surface in close-packed array. In the absence of calcium, the NaDS takes up one of two arrangements with two different lengths of the hydrocarbon chain lying on the Graphon surface.

Several lines of evidence indicate that the calcium is tightly bound at the interface, Dr. Zettlemoyer pointed out. Above the cmc,

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Rear approach to new Purex Lakewood Calif., offices is as interesting as main entrance. A landscaped sunken patio parallels the entire rear of the building.

New Purex Headquarters

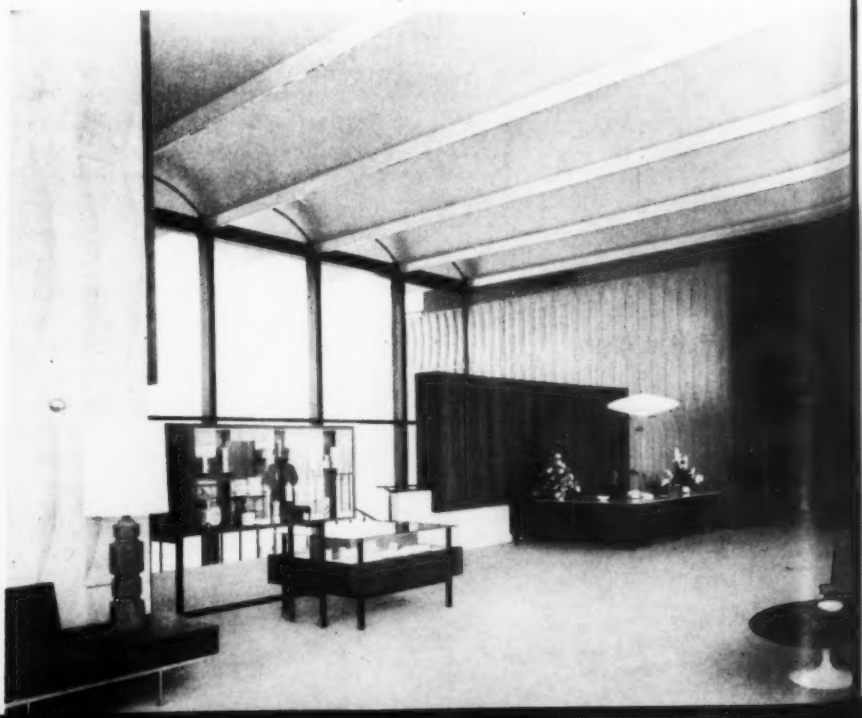
SYMBOLIZING a year of growth, when sales topped the one hundred million dollar mark for the first time, Purex Corp. moved its headquarters late last summer from South Gate to a new three-story office building on a 6.35 acre site in Lakewood, Calif. The unique exterior of the building, which provides 62,000 square feet of floor space for 250 employees, is attractively done in modern steel and concrete construction. The unusual design of the sculptured leaf motif of the precast concrete construction gives a graceful relief to the exterior walls.

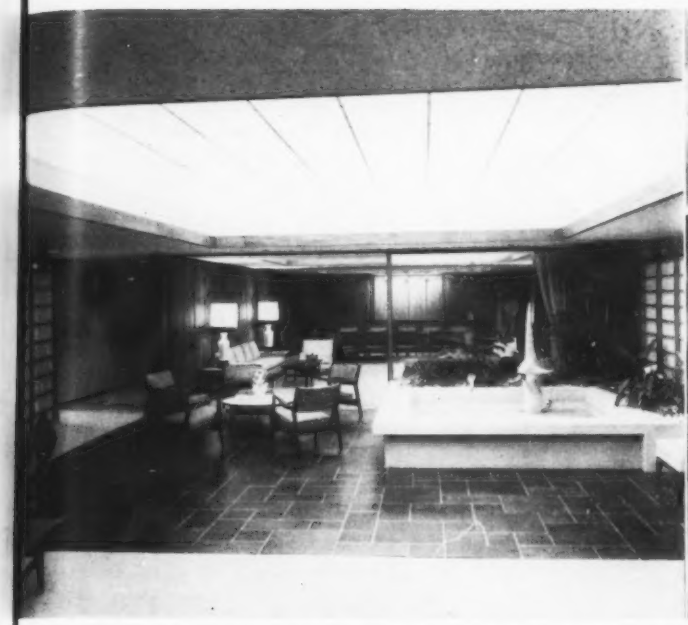
One of the fastest growing companies in the soap, detergent and chemical specialties field, Purex had sales of $102,031,345 for the fiscal year ended June 20, 1961, which represented an increase of 23 per cent over the comparable 1960 figures. Earnings similarly increased to $4,370,462, or 28 per cent over the fiscal year ended June 30, 1960.

The new Purex offices concentrate all headquarters personnel under one roof and also create space in the former South Gate offices adequate for the engineering and two regional sales offices which previously were scattered in various leased buildings in nearby cities. Land formerly used for parking is now available for expansion at the South Gate plant.

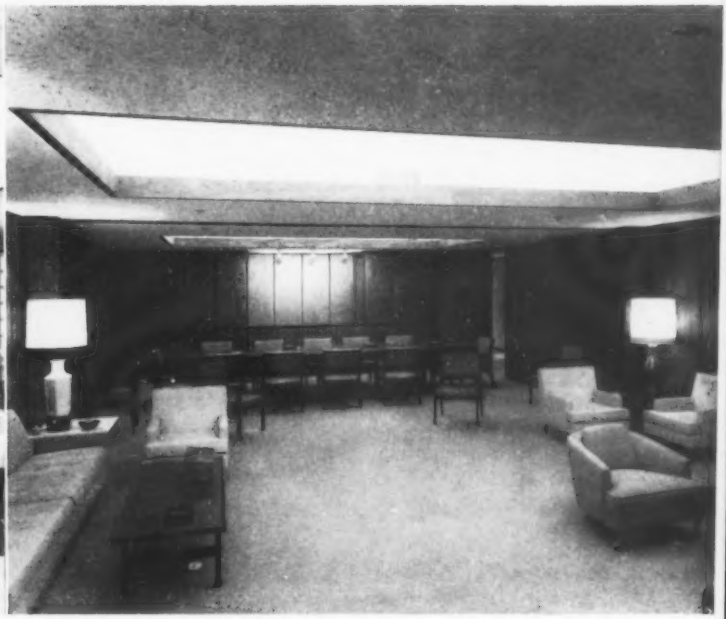
The new headquarters building in Lakewood, which is just north of Long Beach, Calif., were

Commodious main lobby of the new Purex Corp., headquarters building.





Reception room for the third-floor executive offices is separated from board room by sliding glass panels.



The board room and its anteroom serve not only the directors, but for large meetings as needed.

designed by V. Wally Langford and T. V. Anthony, of the Whittier, California architectural firm of Anthony & Langford. Sculptor John Svenson of Montclair, Calif., designed the exterior walls. William Garvey was responsible for expediting and coordinating the construction on behalf of Purex. The general contractor was O. H. Oltmans Construction Co.

Ample room has been provided for the new IBM 1401 data processing equipment, which is now being installed. The land area and the building have been planned to permit the addition of office units which could ultimately provide working space for 800 employees.

Moving the headquarters staff from South Gate now makes it possible to operate South Gate as a branch plant, and in addition provides ample space for the research laboratories of the Purex grocery products division, Southern California grocery products regional sales, and various other branch plant personnel, as well as design and process engineering and the machinery development group of industrial engineering.

Savings resulting from centralization of headquarters office personnel together with economies resulting from the IBM 1401 data processing equipment are expected by Purex to offset most if not all of the annual rental cost of the building.

Purex, whose growth has come largely through acquisitions, was founded in 1925 by Ray A. Precourt and Lionel S. Precourt. In the past year Purex has acquired two well-known companies in the soap and chemical specialties fields. In May, 1961, Purex acquired T. F. Washburn Co., Chicago based producer of floor maintenance materials. Potter Drug & Chemical Corp. of Malden, Mass., maker of

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Guiding theme of Purex ("You'll Find the Woman's Touch in Every Purex Product") is symbolized in this massive hand and the Purex octagon placed at the entrance of the new headquarters building of Purex Corp., in Lakewood, California.

A typical homemaker member of Canco's test panel compares new spray starch with another similar product. Sprays that drip either at the beginning or end of spraying action are not considered efficient by these testers. Some starches leave white spots which are a source of great annoyance to homemakers, according to home economists at American Can Company.

ALL of us in business today have two bosses. We may agree with our immediate boss on some philosophies and ideas, and disagree with him on others which are not always in accord with our own. We may discuss points of difference and try to justify our reasoning and eventually arrive at a point of agreement. In the grocery industry, however, we all work for another boss, the American homemaker, with whom we do not have the privilege of sharing a give-and-take discussion. She's our big boss and the one who makes the final decision as to whether or not she likes our ideas. She's the one who decides to buy our product or not to buy it. Because she holds the success or failure of our products in her power, it behooves all of us to try to understand as much about her and her needs as we can. By learning to know the homemaker as a consumer, our decisions will be made easier and they will be more apt to be right.

The first reaction of many men will be that they and other members of the family are doing some of the shopping and hadn't we better consider their needs too. In general, when men do the grocery shopping they buy brands suggested or dictated by the woman of the family. We know that men are more experimental shoppers than women, but if they buy an item that doesn't measure up to the standards of the user, or if the item doesn't adequately fill the need, it will probably not be purchased a second time by any one in the family.

At American Can Company the woman's viewpoint is regarded as a very important key to the successful development of packages and to the packing and marketing of products by our customers. It is in these two areas that our Home Economics Department works at interpreting this woman's viewpoint and thus serves as a valuable aid in the successful marketing of grocery products. Our Canco management people are firmly convinced that to understand a woman you have to be a woman. Home economists are not qualified to interpret the woman's viewpoint merely because they are women, but because they also have a background of training and a wealth of personal experience which has qualified them to know and understand the average woman.

For example, we use a panel of homemakers to help us evaluate containers, products and labels. Our home economists may analyze a particular problem and then use the panel to substantiate their findings. Or we may use our panel to give us an impulse opinion and then analyze the reactions of the panel members as a group. Back of all of our evaluations and decisions, the consumer is the influencing factor. The professional home economist can be an extremely important link between the manufacturer or packer and the consumer. Ours may be as easy a job as writing the directions for use of a package or product. Simple as it may be, however, correct directions may mean the difference between success or failure of a product or package depending upon whether they are understandable to the woman.

Color in Packaging

Color is an important area of packaging. It is a fact that women react very differently to color than do men. If it were as elementary as finding out which are the favorite colors of men and women, the problem would be very simple. Women, however, are very much more color conscious than men and they are more sensitive to color and to color's many gradations. And, most important, they are strongly influenced by association with the color of the product or the color-climate in the area where the product is used.

— The Woman's Point of View

By Edalene Stohr,
Director of Home Economics
American Can Company
New York

For example, aqua and turquoise are presently very popular colors with homemakers. They like this blue green color and use it in their kitchen accessories. It is a pleasing color for decorating most any room in the house. As a color for packaging, aqua or turquoise is pleasing for cosmetics and even seems to fill the bill for cleaning products used in the bathroom. But when used on canned foods, such as fruits and vegetables, it doesn't seem to have the acceptance of the brighter, more intense colors. For cosmetic soap packaging you're dealing with a delicate product so aqua is a good color, but when you consider the heavier duty washing detergents, aqua just doesn't have the correct connotation—it's too delicate to do a heavy job. Most pastel colors are appealing and attractive, but their use is limited according to the product and the area of the home where they will be applied.

Is this the unpredictable woman or the illogical female? Based on a male's logic, it surely must seem so, but the fact that so many women react in the same way to certain fundamentals indicates that there is a definite pattern that feminine logic follows. Again I'd like to say you have to be a woman to understand a woman.

Labels

The color of a label may help to sell a product. However, the copy on the label plays an important role not only in selling the product the first time, but in keeping it sold through repeat purchases. This has become increasingly true of late because of the many new and unfamiliar products and packages which have appeared and continue to be marketed. The American consumer has learned that she must depend on the label information to help her derive the most convenience from the product. It is no myth that women do not like to read directions, but if the product is new or unfamiliar, they will at least scan the directions rather than completely miss some time saving use that will make their homemaking chores easier. Because women rarely read labels carefully, we recommend fine print be kept to a minimum; the most important directions should be in larger or bolder type to be seen more easily. This is particularly true of numbers indicating time. For example, take a single direction like: "Let dry 5 minutes, then polish." The number 5 is much more apt to be seen if it is in larger or different type face than the other words in the sentence. If the homemaker forgets between uses, she can then refer back to the time figure without reading the complete directions. Special directions, such as how to dispose of a pressure can, should be placed prominently on the label in a straightforward, factual manner. Directions, placed in an obvious location, in type large enough to be seen at a glance are better than those placed at the end of a back panel — even when the latter is preceded by an attention getting caption.

Directions to invert a paint can and empty the valve are very important because this will eliminate paint-clogged valves on reuse. Because these directions are important to the proper functioning of the can, they should be placed in a prominent position with perhaps a line drawing to illustrate the position in which the can should be held. A picture will tell the story in far less time and in less space than words to describe

About the author . . .

As a part of the sales department of American Can Co., Miss Edalene Stohr heads a group of home economists whose job is to interpret the woman's viewpoint to Canco and its customers.

Miss Stohr is a graduate of Iowa State University and began her career as a utility home service director in Maywood, Ill. Later she conducted cooking schools throughout the U. S. and Canada for the National Live Stock and Meat Board.

She produced and participated in the first series of color TV food shows originating in New York, and for several years did specialized food promotions for General Foods Corp. She came to Canco from "Woman's Home Companion," where she was associate food editor.

the action. A picture will also stress the importance of emptying, the valve. Otherwise if the user is familiar with a pressure package, she may never refer to the printed directions even though this is her first experience with an aerosol paint.

There are many homemakers over 40 years old who are using aerosols and find type on labels difficult to read because of their eyesight. Many times, instead of getting their glasses, they may guess at how to use a product. Homemakers with years of experience are no more able to use an aerosol container correctly for the first time than a 22 year old newly wed. So be sure to have all of your consumers in mind when designing product labels. Not only size, but color contrast of type is also important for legibility. Fine white printing on a blue background may have a smart appearance, but chances are that black or dark printing on a lighter background will be far more easy to read.

Many times, illustrations to describe the use of a product are more readily seen and understood than written directions.

This, again, is a case where a picture may be worth a thousand words. A picture is less likely to be missed than written directions. In some cases, on new packaging in particular, it is almost impossible to describe the product's use understandably because it requires a method of handling with which the homemaker may be completely unfamiliar. Women, basically, are not mechanically minded and cannot be expected to figure out for themselves how to use mechanical features. Words may fail, but pictures seldom do.

Canco home economists, including Miss Stohr, extreme left, and Joseph H. Fredette, assistant products manager, non-food containers, discuss label design and directions for use on a pressure container of a Canco customer. Woman's viewpoint is important ingredient in making label contents meaningful to women consumers who will use the product.

Convenience

The rapid growth of the spray starch market indicates that women will pay for convenience. The equally fast growth of the hair spray market proves the same point. There is a common feature in both of these products: the user is able to accomplish something that is not possible in any other kind of package. This kind of packaging convenience can command a premium price, while a change in a package that does not contribute in a major way to the consumer's convenience seldom succeeds to the same degree.

Flavored ice cream syrups in aerosol containers illustrate this point well. The pressure can is convenient for syrups, but does little for the homemaker that a can, bottle or jar does not do nearly as well. On the other hand, however, if a topping were extremely thick, the pressure can would make it much easier to spread and would therefore have a very definite convenience advantage which no other packaging would offer.

The phenomenal and rapid growth of the new spray starch to 44 different brands in a very short span of time is another illustration of a case where convenience commands a premium price. Liquid starch costs seven times more than dry starch but the convenience makes it worth the difference. Now, even though spray starch

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Member of Canco's homemaker test panel uses now Canco 24-ounce pressure container. In test shown, homemaker used familiar 12-ounce pressure can, then the new larger size, and finally the larger size can with pistol grip spray attachment. Opinions were then given by tester as to convenience of new 24-ounce size in comparison with existing 12-ounce unit.

Germicidal Liquid Skin Soap

Antimicrobial efficiency plus mildness to skin are claimed for liquid potash soap vehicle containing one per cent hexachlorophene, lecithin as emollient

By Frank P. Panzarella, Ph. D.* and David D. Dexter, M. D.**

DESIRABLE antimicrobial and dermal properties are exhibited by a new liquid skin cleanser† based on anhydrous potassium soap. The product is comprised of a) a natural vegetable oil base to provide effective but gentle cleansing; b) hexachlorophene to render skin free of hospital sepsis and; c) lecithin for emolliency and lubrication.

Because of its balanced composition, this liquid preparation has the following features:

1. Thorough cleansing and effective degerming of skin;
2. Superior mildness towards skin; non-sensitizing.
3. Absence of any detergents liable to irritate and defat skin on repeated use;
4. Just 1% hexachlorophene to give degerming activity equal to that of other surgical scrub preparations containing three times as much hexachlorophene.
5. The new formula provides a protective mantle on skin, inhibiting growth of hospital pathogens, including antibiotic resistant staphylococci; bacterial counts on skin reduced up to 99% by regular use;
6. Excellent deodorant effect;
7. Regular use in the bathing of infants reduces risk of diaper rash by destroying bacteria responsible for ammonia production from urine.

Germicidal Activity

New liquid skin cleanser possesses two important properties necessary for effective degerming of skin. First, it is bacteriostatic at very low concentrations against skin bacteria such as staphylococci. For example, ten parts per million in nutrient agar completely prevent growth of pathogenic staphylococci, including resistant strains.

Second important property of the preparation is its substantivity to the skin, which accounts for an invisible mantle of hexachlorophene which adheres to the

Table I. Relative degerming activities of 3% hexachlorophene in detergent* and 1% hexachlorophene in soap**

subject	before count	after 2 wk. use	% reductions
3% hexachlorophene in liquid detergent base			
1	4410	620	86
2	6150	142	98
3	1069	170	84
4	3460	210	94
5	4788	509	90
6	1950	30	90
7	4150	1338	68
8	3274	600	81
9	4798	494	90
10	3150	125	96
11	3210	502	84
12	820	72	91
			average—88%
1% hexachlorophene in potassium soap base			
13	756	110	86
14	3591	940	74
15	7550	780	90
16	5580	764	86
17	5746	505	91
18	2205	24	99
19	9588	1480	85
20	8940	1781	80
21	9565	1820	81
22	1105	440	60
23	1720	77	95
24	2630	260	90
			average—85%

All numbers to be multiplied by 1000

*—"Phisohex"
**—"Petro-Prylic" liquid skin cleanser

*Coordinated Research Associates and Jamaica Clinical & Biochemical Laboratories, Inc., Jamaica, N. Y.

**Dermatologist, Hempstead, N. Y.

†"Petro-Phyl'c" Liquid Soap, a product of Doak Pharmacal Co., New York.

skin and resists water rinsing. The hexachlorophene mantle, although minute, acts to prevent multiplication of skin bacteria that survive surgical scrubs. Thus, the cutaneous bacterial counts are maintained at a very low level during periods between regular washings.

The importance of hexachlorophene as a preferred degerming agent has been well documented in the literature. A. J. Canzonetti and M. M. Dalley (1) reported that only hexachlorophene satisfied all important requisites for an effective degerming agent, viz., activity, substantivity and compatibility. Some other germicides may leave films beneath which bacteria can proliferate. These agents may create a false sense of security, since any disturbance of the film would release viable organisms which might c o n t a m i n a t e surgical wounds. .

Many investigators have found a surgical scrub containing 3% hexachlorophene to be more effective than regular soap in reducing bacterial skin counts. For example, Traub and co-workers (2) reported that a two-minute scrub with such a formulation gave better results than a 20-minute scrub with regular soap and water. Seastone (3) reported on the cumulative bacteriostatic effect of hexachlorophene surgical scrub on resident bacteria. Hufnagel and coworkers (4) compared various germicides and concluded that 3% hexachlorophene in a surgical scrub displayed the most rapid disinfecting action.

It is the purpose of this report to show that the action of a 3% hexachlorophene surgical scrub can be equalled by this liquid skin cleanser (anhydrous potassium soap 19%) containing only 1% hexachlorophene. The secret of the high activity in the latter is in the vehicle employed. The vehicle is a mild soap base prepared from vegetable oil devoid of any inactivating effect on hexachlorophene.

Thus, with 1% hexachlorophene our formulation matches the degerming activity of other synthetic detergent based surgical scrubs containing 3% hexachlorophene. Moreover, it is milder to the skin and can be used repeatedly without danger of irritation.

Serial Basin Wash Test

The effectiveness of the soap based liquid cleanser in reducing the bacterial count on human skin and maintaining a low count is measured in a serial basin wash test, (5) based on the original Price multiple basin technique. In this procedure the hands are washed in a prescribed manner, followed by rinsing. The rinse water is analyzed for its bacterial count by plating one ml. aliquots (duplicates) in agar, then incubating at 37°C for 48 hours, at which time the plates are counted. The numbers of viable bacteria washed from the skin with the rinse water are determined by counting the colonies growing in the agar, and multiplying by appropriate factors. From these counts are determined the percent reductions in skin bacteria through the use of the liquid cleanser at least three times daily during a two week test period. A control soap containing no germicide is employed for the serial basin washings.

Twelve subjects were employed in testing the degerming action of the potassium soap cleanser which they used for regular washings at least three times a day. For comparison, a leading surgical scrub preparation containing 3% hexachlorophene in a detergent vehicle, was evaluated similarly on another group of 12 subjects.

Percent reductions in cutaneous bacterial counts appear in Table I. The liquid soap cleanser and the 3% hexachlorophene scrub preparation are shown to exhibit equivalent degerming action. The average percent reduction effected by the specially prepared liquid soap cleanser was 85% (range, 60 to 99%); by the 3% hexachlorophene detergent preparation 88% (range, 68 to 98%).

In a study of the surgical scrub, Blank and co-workers (6) reported that a single scrub with a preparation containing 3% hexachlorophene did not accomplish rapid degerming of human skin. However, it is achieved if the scrub operation is followed by a two minute immersion in 0.1% solution of hexachlorophene in 60% alcohol.

To compare the soap based 1% hexachlorophene preparation with a 3% hexachlorophene scrub, Blank's procedure was employed. Briefly, it is as follows: Hands are washed for 1½ minutes in each of two basins, each containing two liters of sterile water. Bacterial counts are made of the water to indicate the number of organisms on the skin before the scrub. Each subject then performs a surgical scrub for five minutes and afterwards washes in four basins, each containing two liters of water. In the third of these four basins, soap (no germicide) and a scrub brush are employed. The number of bacteria removed in these four basins is determined and the total number of organisms removed is taken as an indication of the size of the bacterial population after the scrub. According to Blank, this is an empirical method, but useful in comparing different surgical scrub preparations. The *"after count"* divided by the *"before count"* times 100 is called the scrubbing index. The most efficient scrub gives the lowest *"after count"* and the lowest scrubbing index.

Two groups of seven subjects each were given a single five minute scrub with the liquid skin cleanser and a 3% hexachlorophene surgical scrub under the conditions of the test described in the foregoing. Individual data and scrubbing indices are given in Table II.

Results indicate that a single scrub with the liquid soap cleanser gives in every individual a lower "after count," and yields an average scrubbing index of 41. The 3% hexachlorophene scrub preparation, on the other hand, shows a lower "after count" in only four

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Germicide/Surfactant Synergism

By Isidore Shafiroff*,
Hysan Products Co.,
Chicago, Ill.

POTENTIATION or synerism of surface active agents towards germicides, disinfectants and bacteriostats is amply documented in the literature. Considerable information is available also on the opposite phenomenon or deactivation of surfactants. This paper will be limited to some surface active agents exhibiting synergistic effects toward germicides, disinfectants and fungicides.

Mechanisms

Reduction of surface tension by surfactants is the precursor to the diffusion of the germicide to the bacterial cell. Hotchkiss (11) presented the following thoughts on the mechanism of surface active agents and their ability to act as bactericides:

The first stage is the combination of surface active ions with oppositely charged portions of the bacterial surface. This may be prevented or even reversed by treatment with suitable competitive ions (8).

*Paper presented at 47th midyear meeting, Chemical Specialties Manufacturers Association, Chicago, May 16, 1961.

Tomcskik (24) and Beckett (4) indicate that a bactericide must be located at the cytoplastic membrane i.e., inside the cell wall of the bacterium to exert its biological effect. The difference between the concentration on the surface of the bacteria and on the cytoplastic membrane may be responsible for the bactericidal effect.

If the hydrophobic groups of the surface active ion have sufficiently high activity for the bacterial surface, absorption of much less than the maximum possible amount of the surface active ion may cause irreversible damage to the lipid film of the bacterial surface and leakage of nitrogen and phosphorous compounds. This is the analog of the readily observed hemolysis of the red blood cell.

After this irreversible cytolytic injury the cells can no longer repair the damage enzymatically and further loss of cell contents leads to death.

The rate and extent of the cytolysis (dissolution or degeneration of cells) depends on the particular systems involved. In some cases sufficient penetration of the surface active ions occurs to denature some of the metabolic enzymes.

Cytolysis appears to involve in some cases, destruction of cellular material other than lipid, as a secondary feature leading to a clearing or partial clearing of the cell suspensions.

The effect of cetyl trimethylammonium bromide in partially stripping the cell wall, has been confirmed for *staphylococcus aureus, staphylococcus faecalis* and *E. coli* by Salton (18) who demonstrated the cytological changes by means of the electron microscope.

Minimal killing time is required by bactericides at the critical micelle concentration. Germicides lose efficiency above the cmc, as the bactericide is solubilized in its own micelle.

The effects of colloidal electrolytes on proteins and lipids have been investigated by Anson (2) and Baker (3) and support mech-

Figure 1. Ratio of soap to ortho-benzyl para-chlorophenol

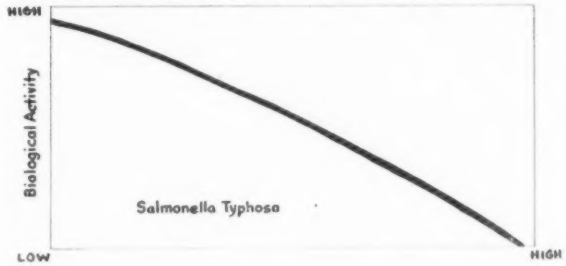
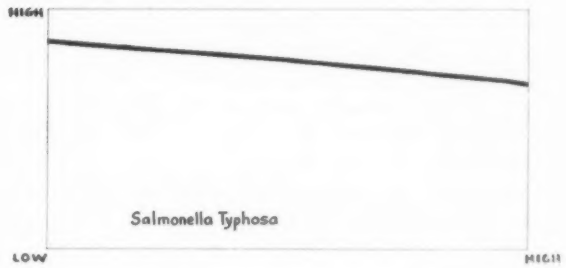


Figure 2. Ratio of alkyl aryl sulfonate to ortho benzyl para-chlorophenol



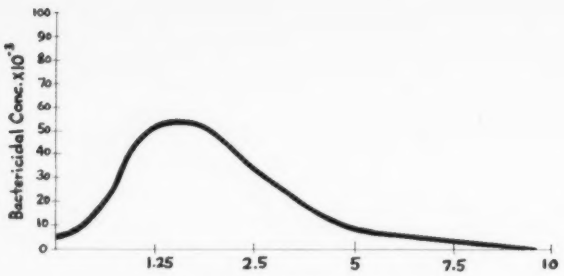


Figure 3. Nonionic quaternary

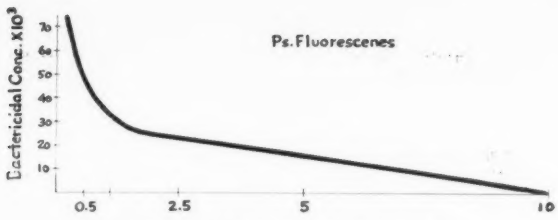


Figure 4. Alkanolamide quaternary

anism of bactericidal action postulated by Hotchkiss. Damage to the cell membrane in addition to osmotic effects can also produce metabolic effects since the enzymes, acid products, lipids and the cytochrome system are probably located in the cell membrane (24).

Many surfactant classes such as soaps, cationics and synthetic anionics have some antimicrobial activity. Tilley and Schaeffer (23) mention the activity of coconut oil soap against *B. typhosus, E. coli,* and *Staph. aureus.* Walker (25) cites the effects of soaps against meningococci, gonococci, typhoid bacilli, pneumococci and diphtheria bacilli. Cationics, which are well known germicides are active against many organisms (5, 12). Amphoteric compounds have been reported (20) which are germicidal. It is interesting to note that penicillin is strongly surface active. The phenomenon of surface activity and micelle formation are believed to play some part in the action against microorganisms, although this alone cannot account completely (7, 10, 15) for penicillin's amazing *in vivo* effects. Other antibiotics such as sulfonamide and sulfanilamide and sulfathiazole are reportedly enhanced in their action (13) by sodium dodecyl sulfate.

Schaeffer and Tilley (19) found that soaps made of coconut oil, caster oil or linseed oil, when mixed with various phenolic compounds and alkali in the proportions of one part of soap to two parts phenol, increased the germicidal efficiency of the phenols in the absence of organic matter. In the presence of milk or blood serum, the increases are comparatively small. They also found that solutions of cresol, cresylic acid or o-phenylphenol and coconut oil soap were sufficiently germicidal against *Staph. aureus* in the presence of milk or blood serum.

Cade (6) found that this synergistic action occurred for chlorthymol, chlor-carvacrol, thymol, chloro-o-phenylphenol, resorcin and hexylresorcin in combination with sodium ricinoleate, sodium lineolate, sodium resinate and sodium oleate.

According to Cade (6), phenols are aided in their germ-killing power by the addition of the appropriate soap at an optimum concentration range in combination with alkali at a pH in which the alkali-phenol combination does not show free alkali to any appreciable degree.

Phenolics-Soaps

Activation is evident for alkylaryl sulfonate in the comparison of coconut oil soap and alkyl aryl sulfonate against gram negative *Salmonella typhosa* as illustrated in Figures 1 and 2.

Note that the biological activity of the soap decreases at high soap to phenolic whereas the effect is negligible in the case of the synthetic anionic.

Ordal and Deromedi (17) studied the effect of sodium lauryl sulphate on the germicidal action of 2,4,6 trichloro phenol in buffered solutions of varying pH's. They concluded that the enhancement of the germicidal action is due to a synergistic action between the wetting agent and the undissociated phenol. Gershenfeld (9) studied the properties of "Aerosol OT" on phenol, mercury chloride and "Merthiolate," and hexylresorcinol and found a marked increase in bactericidal efficiency with increased hydrogen ion concentration. No correlation with surface tension measurements was found in these experiments.

Quaternary Nonionic

Fig. 3 demonstrates the synergistic effect of a nonionic upon a quaternary at ratios of nonionic to quaternary ranging from 1:1 to 4:1 against *Pseudomonas fluorescens.*

Quaternary-Alkanolamide

Figure 4 illustrates the effects of quaternary ammonium compounds and alkanolamides (16A) derived from coconut oil and containing 6% free fatty acid in the form of a soap. The killing dilution of the quaternary ammonium compound alone is 1 part in 7500. As can be seen from the curve, synergism is exhibited over a wide range of ratios. Five times as much alkanolamide as quaternary can be used before activity on the level of the quaternary alone is reached.

Sugar Esters and Quaternaries

These products (16A) exhibit curves which are analogous to the polyether type of nonionic-quaternary mixtures against the gram negative *Ps. fluorescens* and the gram positive *Staph. aureus.*

Sugar Esters and Phenols

Figure 5 illustrates the synergistic effect of sucrose monolaurate on para-chloro-metacresol against *Staph. aureus* and *Ps. fluo-*

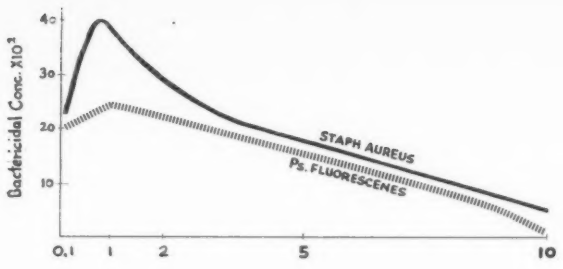


Figure 5. Sucrose laurate: Paralchloro-meta-cresol

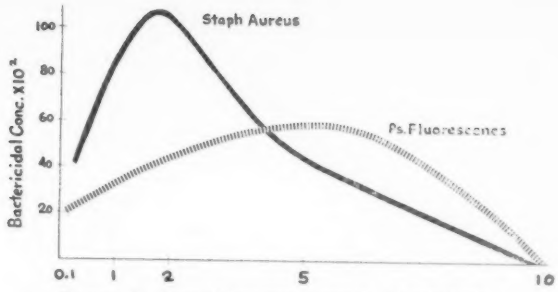


Figure 7. Para-chloro-meta-cresol: Amphoteric

rescens. These results are similar to the effect of soap and phenol. The activity of para-chloro-meta-cresol against the organisms is 1:1500, thus it will be observed that the activity against the gram positive organism is increased by approximately 2.6 times and the activity against the gram negative organism is increased approximately 1.7 times, as compared with the phenolic alone. This is the increase in the dilution factor to obtain the bactericidal concentration.

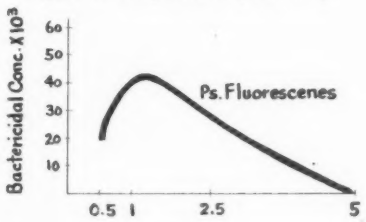
Quaternaries-Amphoterics

Effect of a quaternary ammonium compound and an amphoteric on gram negative *Ps. fluorescens* is shown in Fig. 6. Synergism increases the activity of the quaternary over five times, as compared with the quaternary alone, based on figures of increased dilution to the lethal concentrations.

Phenols and Amphoterics

Mixtures of para-chloro-meta-cresol and sodium hexadecyl-amino-propionate follow the patterns of soap in terms of activation or synergism of the germicide. Figure 7 illustrates the effect of the optimum ratio, viz., two parts of the phenolic to one part of the amphoteric synergizes the phenolic over six times against *Staph. aureus* and over three times against *Ps. fluorescens*. Note that at a 5:1 ratio the effect against the gram negative organism increases to approximately 4½ times.

Figure 6. Amphoteric quaternary



Chloramine T and Anionics

Albericci (1) reported that the addition of "Aerosol OT" and sodium lauryl sulfate at 0.1% reduced the bactericidal time of a dilution of 1-500 Chloramine T from 2-3 hours to 5-10 minutes. "Aerosol OT" was found to be more effective, but in the presence of dry milk there was little or no difference in the action of two.

Quaternary-Tin Compounds

Recently, a new class of compounds was introduced for the control of bacteria, fungi, algae and marine organisms (22). The most publicized of the compounds, bis (tri-n-butyltin) oxide or TBTO, is claimed to be synergized by a quaternary ammonium compound. The quaternary is also synergized by the TBTO. Since the quaternary is surface active, and aids in the solubilization of the TBTO, we can consider this as a case of synergistic action by the surfactant upon an organo-metallic compound. Table I illustrates this effect.

Table I. Minimum concentration (ppm) for complete inhibition of growth TBTO, quaternary

Organism	TBTO	5 Parts Quat TBTO	Quat
Penicillium funiculosium	2.0	3.0	4.0
Aspergillus flavus	2.0	0.5	63.0
Candida albicans	2.0	1.0	4.0
Bacillus mycoides	2.0	0.1	2.0
Aerobacter aerogenes	8.0	500.0	31.0
Pseudomonas aeroginosa	16.0	500.0	63.0

The activation by the quaternary is clearly evident for the 5th and 6th organisms.

Hexachlorophene, Bithionol and Trichlorocarbanilide

Linfield et al. (14) reported that various nonionics have a potentiating effect on 3,4,4 trichlorocarbanilide (T.C.C.) in soap.

The effect upon hexachlorophene and bithionol was found to be negligible. Table II and Table III illustrate the synergistic effect of eight nonionic surfactants against *Staph. aureus* 209 as deter-

Table II. Potentiating effect of nonionics on the antibacterial effectiveness of T.C.C. in soap (ratio of T.C.C. to nonionic 1:10; test organism S. aureus. F.D.A. #209)

Type of Nonionic	Amount of Bacterial Growth (P.P.M. Basis Agar) at 0.2 p.p.m.	at 0.1 p.p.m.	at 0.05 p.p.m.
None	1+	3+	3+
Tetronic 908	0	0	3+
Tridecyl alcohol + 20 ETO	0	0	3+
Tridecyl alcohol + 15 ETO	0	0	3+
Stearic acid + 15 ETO	1+	3+	3+
Coco fatty acid + 15 ETO	0	2+	3+
Tween 80	0	1+	3+
Nonylphenol + 9 ETO	0	1+	3+
Nonylphenol + 15 ETO	0	1+	3+

CODE: 0 = no growth; 1+ = slight growth; 2+ = moderate growth; 3+ = heavy growth.

mined by the modified agar streak method (21).

The criterion of effectiveness of the synergistic system, as in other systems previously mentioned, is the ratio of the nonionic to the phenolic. Table III (14) illustrates that at low levels of nonionic, a potentiating effect is observed; higher levels of nonionic act as neutralizing agents. Comparison of data listed in Table II and Table III shows that at very high levels of nonionic, deactivation or antergistic effects are observed. An excellent review dealing with the inactivation of bactericidal compounds by nonionics was written by Beckett (4), who discusses contradictions in the literature on the effect of "Tween 80" as an activator and deactivator of the bacteriostatic properties of hexachlorophene.

Although much investigational effort has been expended in the areas discussed, many roads of inquiry remain yet to be travelled. Each day, the literature mentions some novel surfactant type which may be worthy of study as a synergist. Polymeric surfactants such as copolymers of maleic anhydride, para alkyl phenol formaldehyde ethoxylated sulfonates, half esters of polyvinyl alcohol with phthalic or maleic acids are but a few of the compounds under study as surface active agents. When these compounds are researched thoroughly for their basic surface active characteristics they will be investigated in the specialized applications discussed herein.

New organo-metallic compounds in combination with anionic or nonionic compounds may prove to be a fertile area of research. Another grouping worth mentioning, strange as it may seem, is the combination of cationic and anionic blends. Co-effects of two or even three surfactants in combination with antimicrobial compounds to extend the range of activity and produce "super-synergism" surely will prove to be a fruitful field of study.■

Table III. Inhibition or potentiation of antibacterial activity of T.C.C. as a function of nonionic/T.C.C. ratio (in soap)

Type of Nonionic	Ratio Nonionic/ T.C.C.	Amount of Growth OFS. Aureus F.D.A. #209 at stated Concentrations of T.C.C. p.p.m. 0.2	0.1 p.p.m.
Tween 80	5:1	0	1+
	10:1	0	2+
	20:1	0	3+
	50:1	3+	3+
	100:1	3+	3+
Tetronic 908	5:1	0	1+
	10:1	0	2+
	20:1	1+	3+
	50:1	3+	3+
	100:1	3+	3+

CODE: 0 = no growth; 1+ = slight growth; 2+ = moderate growth; 3+ = heavy growth.

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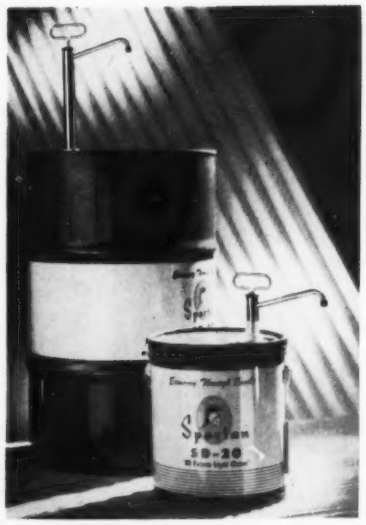

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pH, 5% aqueous solution, 25°C.	min.	4	4	4	4.5
	max.	7	7	7	7.5
Viscosity, 210°F. centistokes	min.	—	—	—	75
	max.	—	—	—	85
Freezing point, °C.	min.	—	—	—	53
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FINE ORGANICS, INC.

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P. ROBERTET, Inc. 221 Park Avenue South • New York 3 • ORegon 3-7585

The new expanded Pluronic Grid...

another key chemical approach from Wyandotte

VOLUME III

A research short cut for formulators

Since the 1956 publication of our "Pluronic Polyol Grid Approach" great growth has been experienced by these block-polymers, both as surfactants and chemical intermediates.

The variety of Pluronic grades has grown from 6 to 30 . . . in addition, there are a number of commercially available mixtures and modifications of regular grades.

Eight new members that comprise the 9 and 10 series Pluronic polyols are of special interest. These polyols complement and enhance the versatility of the other members of the series.

The physical properties of the new members are less temperature sensitive than those of lower molecular weight. Most all of the new members show greater surface tension reduction, allowing for much better wetting. Those grades in the solid form possess sufficiently high detergent properties to indicate promise for use in formulated bars or tablets. The new 9 and 10 series of Pluronic polyols also opens the entire field of emulsification applications (e.g., typical xylene-water system emulsions, based on Pluronic polyols, remained stable through several successive freeze-thaw cycles).

This material and more is contained and described in the new expanded Grid. A proved, practical research short cut for formulators, the Pluronic Grid approach is of inestimable value as a means of systemizing their research . . . helping to eliminate random evaluation of unrelated materials.

What singles out the Pluronic series

Chemists know that polyoxyethylene compounds are water soluble—no matter how high their molecular weight. For many years it was generally assumed that polyoxypropylene compounds would also be water soluble. However, the fact is: at a molecular weight of about 800-900, polyoxypropylene glycols become essentially water insoluble. As the molecular weight of this chain increases, it becomes more hydrophobic.

Investigation at Wyandotte (U.S. Patent #2,674,619) revealed that if water-soluble polyoxyethylene groups were added to both ends of the water-insoluble polyoxypropylene chain, a complete series of new block-polymers with highly desirable surface-active properties could be obtained.

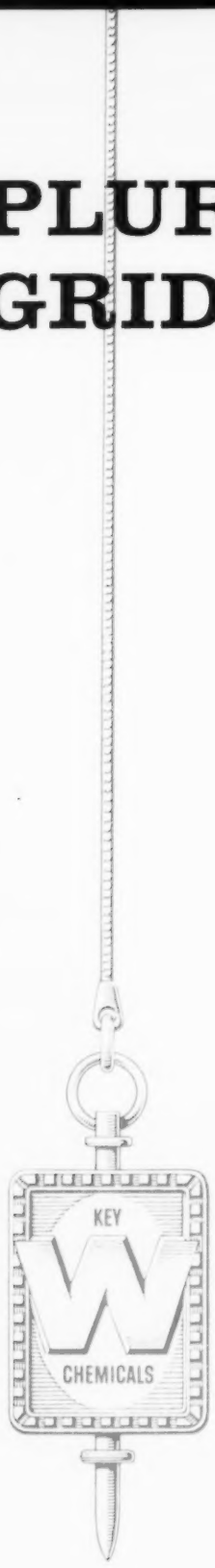
These block polymers are prepared by adding propylene oxide to the two hydroxyl groups of a propylene glycol nucleus. The resulting hydrophobic base can be made to any controlled length, varying from 800 to many thousands in molecular weight.

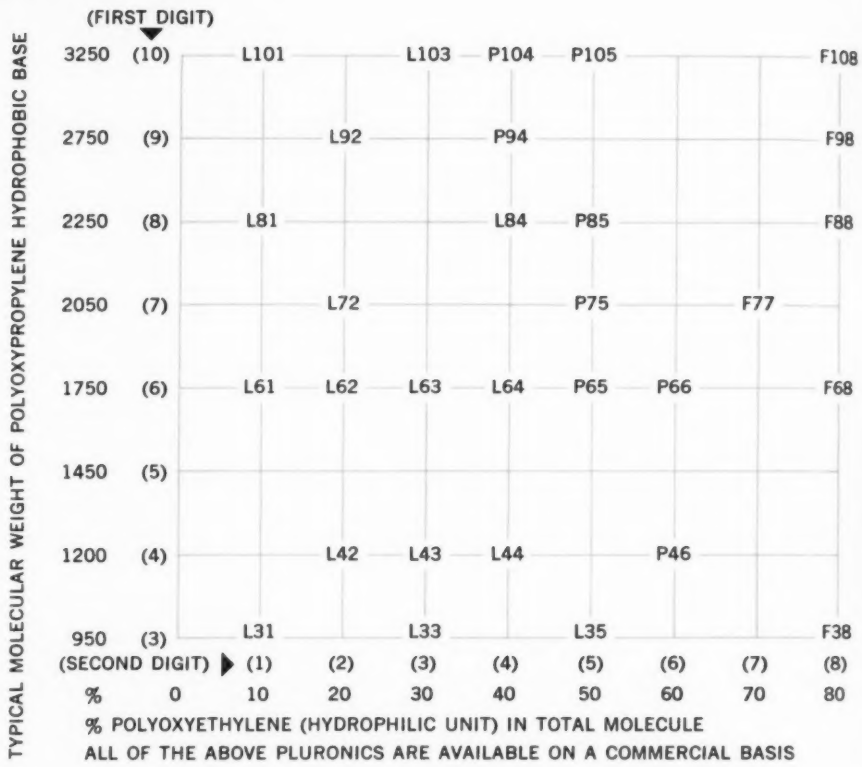
By adding ethylene oxide to both ends of this hydrophobic base, it is possible to put polyoxyethylene hydrophilic groups on the ends of the molecule. These hydrophilic groups are controlled in length to constitute anywhere from 10% to 80% of the final molecule. The simplified structure can be represented as:

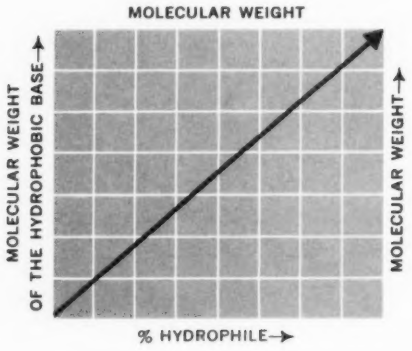
$$HO\,(CH_2\text{-}CH_2\text{-}O)_a\,(CH\text{-}CH_2\text{-}O)_b\,(CH_2\text{-}CH_2\text{-}O)_c\,H$$
$$\qquad\qquad\qquad\qquad\quad |$$
$$\qquad\qquad\qquad\qquad\quad CH_3$$

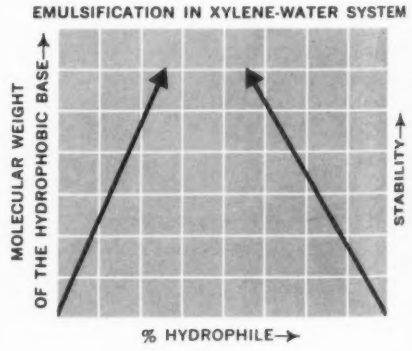
Other products on the market can usually vary only the hydrophile. The Pluronic polyols are unique in that the size of *both* the hydrophobe and the hydrophile are variable, offering an additional dimension of freedom. This produces a wider range of properties, which vary in smaller, more controllable increments.

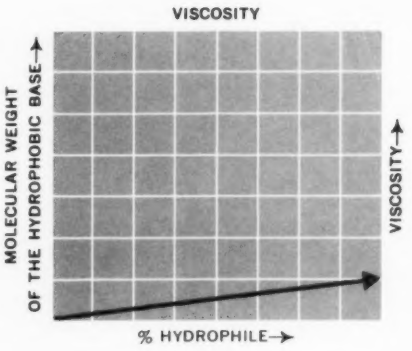
PLURONIC GRID

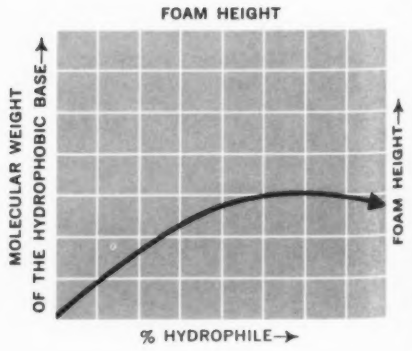


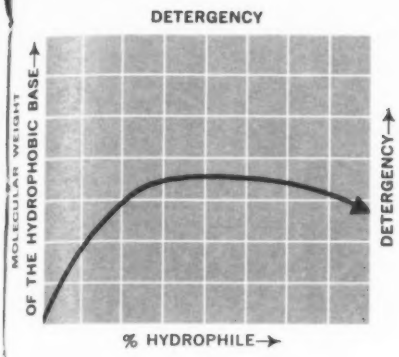

(FIRST DIGIT)
TYPICAL MOLECULAR WEIGHT OF POLYOXYPROPYLENE HYDROPHOBIC BASE
3250 (10) L101 L103 P104 P105 F108
2750 (9) L92 P94 F98
2250 (8) L81 L84 P85 F88
2050 (7) L72 P75 F77
1750 (6) L61 L62 L63 L64 P65 P66 F68
1450 (5)
1200 (4) L42 L43 L44 P46
950 (3) L31 L33 L35 F38
(SECOND DIGIT) (1) (2) (3) (4) (5) (6) (7) (8)
% 0 10 20 30 40 50 60 70 80
% POLYOXYETHYLENE (HYDROPHILIC UNIT) IN TOTAL MOLECULE
ALL OF THE ABOVE PLURONICS ARE AVAILABLE ON A COMMERCIAL BASIS

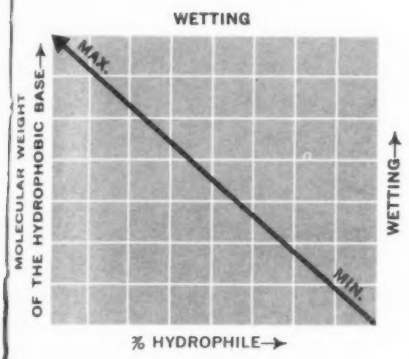


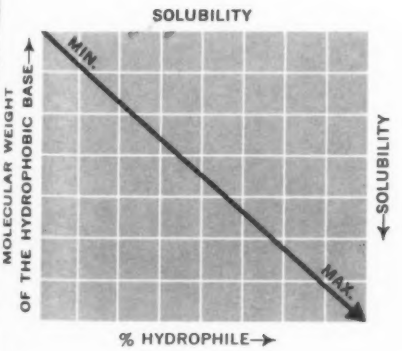


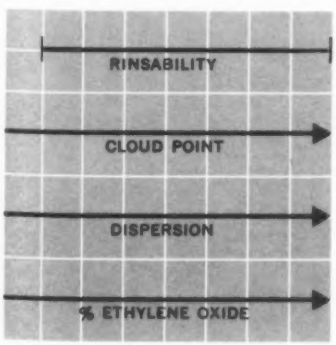












The Pluronic polyols range in physical form from mobile liquids to solids sufficiently hard to be flaked. They are 100% active in all forms, and exhibit a wide variety of surface-active properties. They range in molecular weight from 1,000 to over 16,000. They vary from materials that are almost water insoluble to materials that have no cloud point—even at the boiling point of water.

Identification of Pluronic Polyols

To simplify the naming of the Pluronic polyols, they are identified by a letter (L, P, or F) and a number. The letter identifies the physical form of the particular Pluronic polyol: L for liquid, P for paste, F for flake. The first digit or digits identify the typical molecular weight of the hydrophobic base, as indicated by the column to the left of the Grid. The last digit indicates the approximate per cent of ethylene oxide in the total molecule.

Thus, Pluronic F108 is a flake with a typical hydrophobic-base molecular weight of 3250; approximately 80% of the molecule, by weight, consists of hydrophilic polyoxyethylene groups, and the remaining 20% is the hydrophobic polyoxypropylene group.

Total molecular weights of the Pluronic grades can easily be approximated. For example:

$$\text{Molecular weight of F108} = \frac{3250}{.20} = 16250$$

3250 is the typical molecular weight of the polyoxypropylene base for those Pluronic grades whose first digits are 10. And .20 means that approximately 20% of the molecule, by weight, is polyoxypropylene.

The Pluronic Grid approach and its advantages

The Pluronic Grid is a graphic representation of our broad series of Pluronic polyols, formed by plotting molecular weight ranges of the hydrophobe against the per cent of the hydrophile in the final molecule. In brief, these are the advantages:

1. *Provides a controlled systematic method of screening.*
2. *Minimizes costly random screening by establishing property trends.*
3. *Offers a single method of determining the effects of changes in molecular weight and in hydrophobic-hydrophilic ratio.*
4. *Helps develop new products and processes by the accumulation of information on related grades of the Pluronic series that would have been impossible with random screening of other surface-active agents.*
5. *Permits the chemist to find the Pluronic or combination of Pluronics with the best balance of properties for the solution of his problem instead of trying to formulate to a surfactant's properties.*

How to use the Pluronic Grid

Because of the wide range of molecular weights obtainable in the Pluronic series—and because of the two degrees of freedom (controlling the molecular weights of both the hydrophobe and the hydrophile)—properties of the Pluronic grades can be plotted as trends across the Grid.

By observing these trends, the formulator can select—from the Grid—those Pluronic grades having the best balance of properties for his particular application. After only a few laboratory tests, he can narrow this area down to the best Pluronic polyol or combination of several grades for his formulation.

Known trends for several general properties of the Pluronic series are shown; other specific trends can be determined easily by evaluating a few Pluronic grades from various positions on the Grid. In this way, it is possible for anyone to plot his own trends . . . individual trends directly pertaining to his own operations, conditions, or problems.

Example I:

Formulation of an Insecticide Compound

In formulating an xylene-type insecticide, it is desired to add a surface-active agent having the following properties:

1. *It must be a good emulsifier.*
2. *It must have low foam.*
3. *It must cause good wetting.*
4. *It must possess good lime-soap-dispersing ability.*
5. *It must be soluble in cold water.*

Rather than initiate a random evaluation of all the unrelated surface-active agents now commercially available, the formulator can save research time—and direct his efforts in an organized approach to the problem of selecting a suitable sur-

factant—by referring to the Pluronic Grid.

The emulsification property is perhaps the most important. The polyols at the top center of the Grid give the best xylene-water emulsification properties. The members of the series in the upper right quadrant show the best lime-soap-dispersing, while the members in the upper left quadrant show the best wetting properties. The lowest foaming members of the Grid are on the extreme left-hand side. Being nonionic, the Pluronic polyols are inversely soluble with temperature . . . all of the members of the series possess good cold-water solubility characteristics.

Since emulsification, good wetting and good lime-soap-dispersion are the most important properties, the formulator should evaluate the Pluronic grades L103, P104, L92 and P94. This systematic approach to the problem can eliminate much fruitless work in the unprofitable areas.

In actual tests on the xylene-water system, Pluronic L103 has appeared to be the best member in the series for this application.

Example II:

Formulating a Home Laundry Detergent Compound

The surface-active agent used in a detergent should have the following properties—low to moderate foam, solubilizing ability for lime soaps, good detergency and good rinsability.

As you proceed across and up the Grid, the foam characteristics of the Pluronic polyols increase to a maximum and then decline.

Pluronic polyols with the best soil removal properties are found in the center portion of the Grid. All of the Pluronic polyols are excellent lime-soap-dispersants; the most efficient are located in the upper right-hand quadrant. All of the Pluronic polyols exhibit excellent rinsability.

Since rinsability, desired foaming characteristics, and detergency are the most important properties, the formulator should evaluate Pluronic grades L62, L63, L64, P65 and P75, or F68, F77, F88, F98 and F108, if a solid surfactant is desired.

By applying this systematic approach, the formulator can eliminate much fruitless work and extensive testing of many unrelated surface-active agents.

The PLURONIC

series has a growing list of commercial applications

Agricultural Products: Emulsifiers; emulsion stabilizers; dispersing and wetting agents.

Cosmetics: Deodorants; hair preparations; lotions; oral-hygiene products; shampoos*.

Formulated Detergents: Laundry products*; dairy cleaners; detergent sanitizers; floor cleaners; rug cleaners; mechanical-dishwashing products*; rinse aids*; scouring powders; foam level control.

Latex and Rubber: Stabilizers; viscosity regulator for styrene-butadiene latices; vulcanizers.

Lithography: Dampener roll cleaners*.

Metal Cleaning: Alkaline metal cleaners*; aluminum anodizing; passivating; steel pickling.

Metal Cutting: Water-soluble coolant and lubricant formulations*; resinoid grinding wheels*.

Paint: Emulsion paints*; pigment dispersing; improved leveling, spreading, and brushability; viscosity control.

Paper: Coating colors*; reducing viscosity; pigment dispersing; latex stabilizing.

Pharmaceuticals: Dispersants for antibiotics; solubilizers for antibiotics and vitamins.

Petroleum*: Demulsifying agents; dispersants and lubricants for drilling muds; wetting agents for secondary recovery.

Plasticizers: Methylmethacrylate, phenol-formaldehyde, urea-formaldehyde, and polystyrene resins.

Polyurethane Resins*: Reacting with diisocyanates to give economical foams of superior properties.

Soap: Soap-synthetic and all-synthetic bars; lime-soap dispersant.

Textiles: Desizing formulations; antistatic agents; continuous hypochlorite bleaching; dye leveling*; kier boiling; soaping-off prints; softening warp sizes.

Water Treating*: Boiler water; scale prevention in industrial water supplies.

And in many other miscellaneous uses such as: Defoaming agents; mold-releasing compounds; water flooding; etc.

**Technical Data Sheets available upon request.*

The Pluronic Grid can help you choose the proper chemicals for testing, but only a thorough evaluation in your own laboratories can give you the full scope of what the Pluronic polyols can do for you. Write today for samples, general listing of physical properties, data sheets pertinent to your application, and other technical information. Wyandotte Chemicals Corporation, Wyandotte, Michigan. Offices in principal cities.

WYANDOTTE CHEMICALS

MICHIGAN ALKALI DIVISION

SODA ASH • CAUSTIC SODA • BICARBONATE OF SODA • CALCIUM CARBONATE
CALCIUM CHLORIDE • CHLORINE • GLYCOLS • SODIUM CMC • ETHYLENE OXIDE
ETHYLENE DICHLORIDE • POLYETHYLENE GLYCOLS • PROPYLENE OXIDE • PROPYLENE
DICHLORIDE • POLYPROPYLENE GLYCOLS • SURFACE-ACTIVE AGENTS • DICHLORODI-
METHYLHYDANTOIN • CHLORINATED SOLVENTS • URETHANE FOAM INTERMEDIATES
DRY ICE • OTHER ORGANIC AND INORGANIC CHEMICALS

FORM NO. 189-61

PRINTED IN U.S.A.

Chemical Specialties . . .

Aerosols
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Cleaning fluids
Deodorants
Disinfectants
Floor waxes
and other floor products
Glass cleaners
Household ammonia
Insecticides
Mildew compounds
Moth specialties
Polishes
Repellents
Rodenticides
Sanitizers
Skin protectants
Stock sprays
Sweeping compounds
Wax strippers
Wood chemicals
and other
Chemical Specialties

William W. Bryan, vice-president, Humble Oil and Refining Co., Houston, Texas, will discuss "Marketing Opportunities in the 'Sixties" at group luncheon Wednesday, December 8, during the 48th annual CSMA meeting.

SPENCER new product report:

New Unique Polyethylene Emulsion Improves Floor Polishes These 5 Important Ways:

Spencer "Poly-Em"* 10016, a polyethylene emulsion produced as a liquid polymer, also makes possible new manufacturing economies.

CHANCES are, your firm is one of the many polish manufacturers currently testing new formulations utilizing Spencer "Poly-Em" 10016 (anionic)† Polyethylene Emulsion. If so, you may have already discovered the superior qualities Spencer "Poly-Em" 10016 brings to floor polishes.

Comments from polish makers who have sampled this new patented Spencer emulsion cite these 5 important ways "Poly-Em" 10016 improves the physical properties of floor polishes.

1. Increases Durability and Wear Life: Higher in molecular weight than other available polyethylene waxes, Spencer "Poly-Em" 10016 exhibits greater resistance to scuffing, plus prolonged wearing ability.

2. Improves Soil Resistance: The unmatched uniformity of particle size in Spencer "Poly-Em" 10016 Emulsion substantially reduces dirt pick-up.

3. Imparts No Odor: A non-oxidized polymer, Spencer "Poly-Em" 10016 is free from the odor usually associated with oxidation by-products.

4. Enhances Clarity: Not subject to oxidation discoloring, Spencer "Poly-Em" 10016 dries with outstanding clearness.

5. Does Not Yellow From Age: Considerably more stable than oxidized polyethylenes, Spencer "Poly-Em" 10016 is completely non-yellowing.

These improved properties in polish formulations are achieved without sacrifice of gloss, slip-resistance, or removability. Presently available data indicates that new Spencer "Poly-Em" 10016 can be incorporated in polish formulations at a cost equivalent to or lower than comparable ingredients now in use.

In addition, the unique physical properties of Spencer "Poly-Em" 10016 promise cost-cutting innovations in polish production:

In Ready-To-Use Form

The only polyethylene wax made as a liquid (by an emulsion polymerization process), Spencer "Poly-Em" 10016 requires no mixing.

Easy To Handle

Superior to oxidized compounds in mechanical stability, Spencer "Poly-Em" 10016 offers excellent handling characteristics. It flows and pumps freely at temperatures from 32° to 150° F.

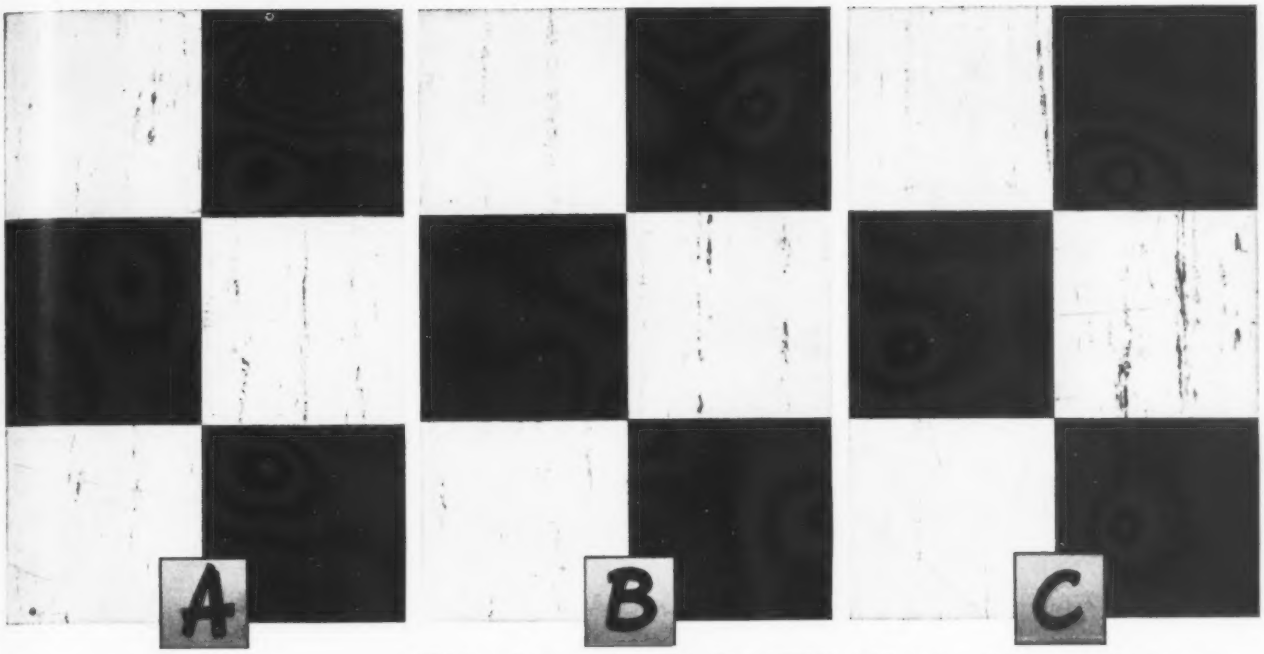
Simplifies Storage

A full 40% solids content in standard form, Spencer "Poly-Em" 10016 enables manufacturers to reduce the amount of material that must be stored and handled.

Can Cut Shipping Costs

The high solids content of Spencer "Poly-Em" 10016 makes possible concentrated polish formulations that can be diluted at distant distribution points, or by the ultimate consumer. Freight costs can be greatly reduced.

A large new Spencer plant, specially built for "Poly-Em" production, is now being completed in the Chicago area.



Which polish contains "Poly-Em" 10016? Different polish formulations were applied to these panels of floor tile. After extensive use in a commercial building, the panels were photographed (unretouched, above) for comparison. Panel "B," noticeably less scuffed and soiled, was protected by the "Poly-Em" formulation. Panels "A" and "C", coated with leading brands of floor polish, showed considerably less durability.

"Poly-Em" 10016 will be available in commercial quantities early in 1962. But, you need not wait.

Free Evaluation Samples

Test quantities, technical data, and suggested formulations for Spencer "Poly-Em" 10016 are available to you now without cost. Write, wire, or phone "Poly-Em" Technical Service: Spencer Chemical Company, Dwight Building, Kansas City 5, Missouri.

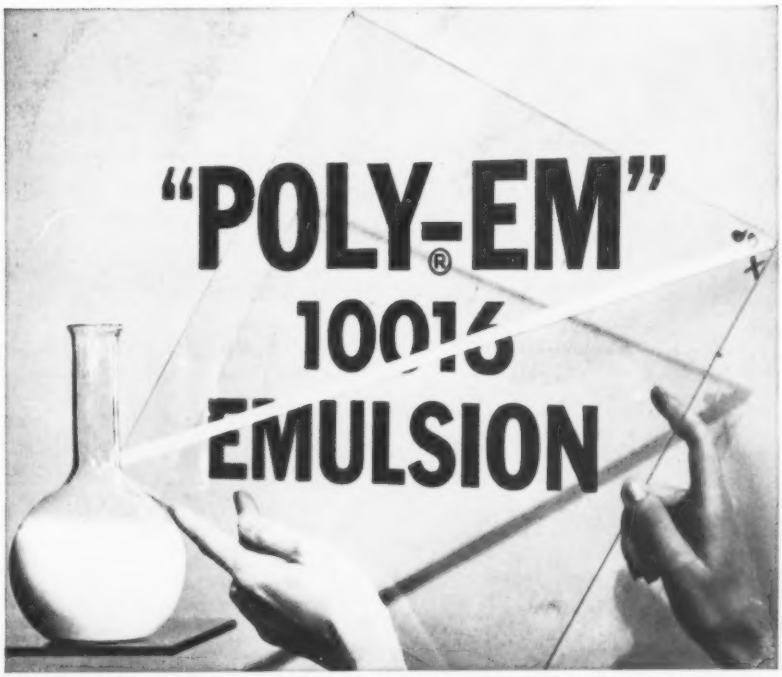
†"Poly-Em" 10017, a non-ionic "Poly-Em" Polyethylene Emulsion is currently being evaluated in polish formulations. Information will be available shortly.

SPENCER "POLY-EM"
EMULSIONS

*"Poly-Em" is a registered trademark of Spencer Chemical Company.

SPENCER®

SPENCER CHEMICAL COMPANY
Dwight Building, Kansas City 5, Missouri



Which half of the glass is coated with a "Poly-Em" 10016 floor polish formulation? This unretouched photograph demonstrates the outstanding clarity of Spencer "Poly-Em" Polyethylene Emulsions in polish. The uncoated top half is difficult to distinguish from the bottom portion which was coated with a "Poly-Em" 10016 floor polish formulation.

Sell her with *Fragrance*

Perfume plays an important part in your sales program. Recognize the importance of the right fragrance, custom-designed to sell your product to your customers.

Seek out the sound marketing knowledge, superior creative talents, and the long experience of the master perfumers at IFF. They will develop the scent that is needed to give your product the impelling sales appeal required to make the grade in today's market.

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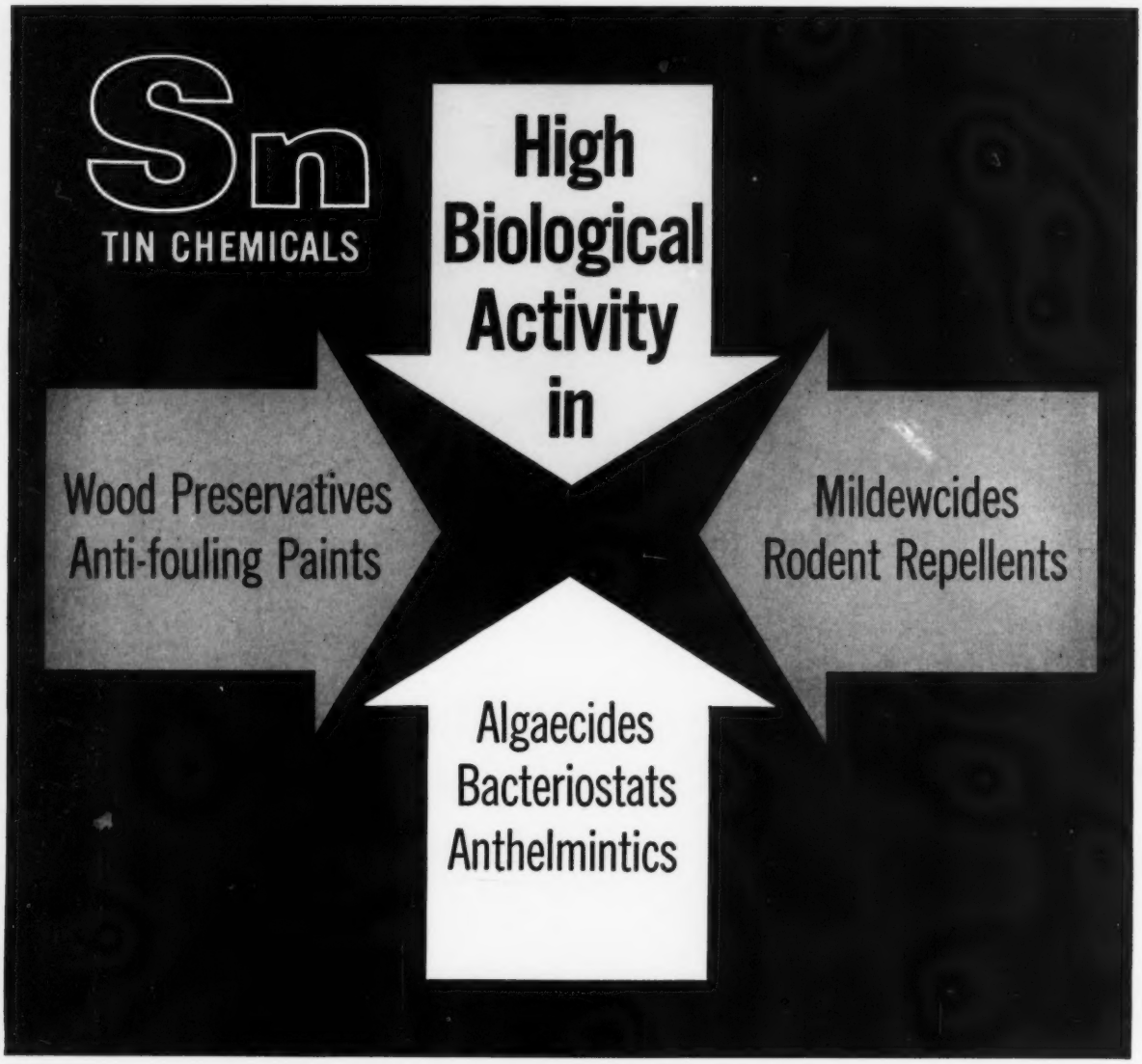


Organotins are extremely effective for a variety of biological applications which include: treatment of process water, wood preservation, anti-fouling paints, textile purifiers, institutional germicides, rodent repellents, mildew control in paint and plastics, and anthelmintics for poultry and fish.

Particularly useful is bioMeT* TBTO® *bis(tri-n-butyltin) oxide.* This M&T organotin has broad-spectrum activity which is enhanced by its miscibility in most organic solvents and virtual insolubility in water. Adsorption characteristics provide control even under severe leaching conditions. Use in formulations has resulted in a wide variety of products, many of which are described in our new TBTO technical data sheet.

TBTO and other M&T organotins are part of a complete line of tin chemicals which include tin salts, stannates, and tin salts of organic acids. Write for information.

*Trademark

M&T CHEMICALS | Sn Sb P Si Ti Zr | organometallics and inorganics

METAL & THERMIT CORPORATION GENERAL OFFICES: RAHWAY, N. J. DEPT. S.

IN CANADA: M&T PRODUCTS OF CANADA LTD. HAMILTON, ONT.

Pardon me, ma'am... just what would you like in a floor polish?

Ask today's busy homemaker that question, and listen carefully to her answer. First and foremost, she wants a polish that gives her floors a deep, rich luster. She wants that luster to endure—no yellowing, no darkening around the edges after repeated applications. And she wants a polish that doesn't give up under the impact of spilled milk, cookie crumbs, tricycles, the endless trek of size 5½ shoes. In short, the lady demands a polish that keeps her floors glowing under all manner of punishment, yet requires little of her time and energy to maintain.

Pleasing this lady requires some very expert formulating and a careful selection of raw materials. Take the wax component, for instance. Repeated tests have shown that Epolene low-molecular-weight polyethylene resins provide maximum toughness and durability. These tests also indicate that, properly formulated, polishes containing Epolene resins exhibit excellent initial gloss and that the gloss is retained for a longer time under severe traffic conditions. Epolene resins also provide low dirt pick-up and high resistance to water spotting. Their low color and non-yellowing characteristics contribute to good appearance and a further reduction in upkeep effort. And because Epolene resins are inherently slip resistant, no anti-slip agent is needed.

A wide variety of Epolene resins—emulsifiable and non-emulsifiable—is available. Compatible with most waxes, elastomers, and other resins, they offer flexibility in formulating. Your Eastman representative will gladly describe their characteristics and help you select those types that are best for your particular formulation and service requirements. Ask him, too, for Technical Data Report F-105, which contains newest time-saving and cost-cutting emulsifying techniques. Or write Chemicals Division, EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

Epolene®
Eastman low-molecular-weight polyethylene resins

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; Atlanta; Boston; Buffalo; Chicago; Cincinnati; Cleveland; Dallas; Detroit; Greensboro, N. C.; Houston; New York City; Philadelphia; St. Louis. **Western Sales Representative: Wilson & Geo. Meyer & Company,** San Francisco; Los Angeles; Salt Lake City; Seattle.

Annual Meeting . . .

AT the 48th annual meeting of the Chemical Specialties Manufacturers Association being held in New York, December 4-6, one thousand representatives of the chemical specialties industry are attending, the largest gathering of chemical specialty manufacturers in history. Producers, large and small, from all parts of the country, of aerosol products, floor maintenance products, detergent and soap specialties, polishes, automotive chemicals, deodorants, disinfectants, insecticides, and other chemical specialties are represented.

Since the founding of CSMA in 1914, it has drawn its membership from all segments of the field from the largest to the smallest manufacturers. Leaders in the industry have been prominent in its affairs. It has offered an open forum for the exchange of ideas and for valuable contacts to its members.

Membership in CSMA could have advantages for your company. It's worth looking into.

A. A. Mulliken
Secretary

CHEMICAL SPECIALTIES MFRS. ASSOCIATION — FOUNDED CSMA 1914

Chemical Specialties Manufacturers Association, Inc.

50 East 41st Street — New York 17, N. Y.

Charles E. Beach, President

H. W. Hamilton, Executive Vice-President — Charles E. Allderdice, 1st Vice Pres.

Donald Templeton, 2nd Vice Pres. — Frederick G. Lodes, Treasurer

A. A. Mulliken, Secretary

Polish up polish sales

Polishes with silicones go on easier, last longer, increase brand preference

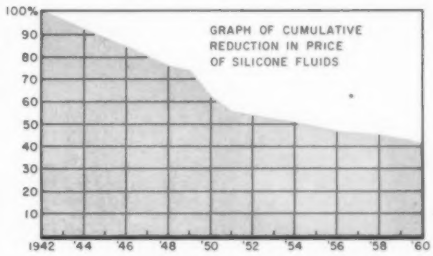
A gleaming table top, a shimmering car finish, a sparkling window... each indicates a satisfied customer. But there's more to making a polish popular than pleasing the eye. How easily does it go on? Will it resist time and weathering? Does it repel water and spotting? The right answers mean more sales. And when you have formulated your polishes with Dow Corning silicone fluids, they meet the test on every count.

Ease of application is a real customer pleaser, a time-saver they remember the next time they buy. With silicones in your polish, application is speedy; less rub-out is required. The polish spreads easier, resulting in faster formation of a better film.

Greater durability and beauty result from silicone formulation, too. No other ingredient can provide the same degree of oxidation resistance and water repellency . . . which means longer lasting beauty and protection for furniture, autos, glass and appliances.

You can get quick help in improving existing products or in readying new polishes for the market by drawing on the vast fund of data our chemists have compiled on the uses of silicones in polishes.

One final note to remember: people now recognize the better looking, more durable protection silicones provide. Take advantage of this growing awareness by putting "silicones" on the label. It will help polish up your polish sales.



Silicone fluids have shown a steady decrease in price while many of your costs have constantly increased.

Contact Dow Corning Corporation, Dept. A124, Midland, Michigan, for technical data or formulating recommendations on the use of silicones for finer polishes.

first in silicones

Dow Corning

THE *Beautiful*

Repellent Market

And it is a beautiful market . . . already big and getting bigger with the tremendous growth of outdoor recreation.

Participant sports such as golf and tennis are enjoying a tremendous popularity. Everyone seems to have outdoor barbecues, patio gatherings or pool-side parties. Outdoor living, outdoor recreation is made more pleasurable with the use of a good repellent to keep off pests.

MGK R-11 and MGK Repellent 326 are accepted and widely used by formulators for the purpose of increasing the efficiency of repellents for biting flies. Non-toxic of course. Write for factual data on formulating and labeling.

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NAME_____

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CSMA Meeting in New York

Hazardous Substances Labeling tops list of subjects to be discussed at 48th annual meeting of CSMA in New York, Dec. 4-6

NEW developments in chemical specialties – legislative, technological, packaging and marketing – are being discussed during the 48th annual meeting of the Chemical Specialties Manufacturers Assn., which got under way at the Hotel Roosevelt, New York, Dec. 5. In over 60 formal presentations at joint and separate sessions of the six divisions of which CSMA is composed, as well as in informal discussions, these subjects are being thrashed out.

Heavy emphasis will be on legislation. In addition to a panel discussion of the Federal Hazardous Substances Labeling Law, scheduled to be enforced next Feb. 1, four of the six CSMA divisions will consider the effects and requirements of the law. Representatives of the Food and Drug Administration of the Department of Health, Education, and Welfare, which is responsible for the administration of the law, will be on hand to discuss the law and answer questions pertaining to its provisions. John L. Harvey, Deputy Commissioner of FDA and William W. Goodrich, assistant general counsel of the Food and Drug Division of HEW, will appear on the panel scheduled for the general session, Wednesday morning, Dec. 6. Other participants include Dr. E. G. Klarmann, Lehn & Fink Products Corp., New York, chairman of CSMA's precautionary labeling committee. Robert L. Ackerly, Cummings & Sellers, Washington, D. C. legal counsel for CSMA, will also be a panelist.

The three-day meeting of CSMA began its deliberations on Dec. 4. During the course of that day and evening, the board of governors of the association and some 63 committees and subcommittees met. Actually, a number of committee meetings were held on Sunday, Dec. 3.

The formal discussion portion of the program began with morning meetings, Dec. 5, of the following divisions: Automotive; Detergent and Cleaning Compounds, Pesticide, and Waxes and Floor Finishes.

Highlights of the Automotive Division meeting included a discussion of the "Labeling of Automotive Products Under the Federal Hazardous Substances Labeling Act . . . ," by George T. Scriba of Union Carbide Corp., a member of CSMA's precautionary labeling committee. A discussion of the formulation of "Auto Wash and Polish Concentrates," by Daniel R. Pail of Dow Corning Corp., Midland, Mich., and a paper on "Sterilization of Interplanetary Vehicles," by Charles R. Phillips and Robert K. Hoffman of the U. S. Army Chemical Corps, Biological Laboratories, Fort Detrick, Md., also were featured at this session.

Mr. Pail's paper dealt with the laboratory development of a chemical specialty which may be used to wash and polish an auto-

Charles E. Beach, president

Charles E. Allderdice, Jr. first vice-president

Frederick G. Lodes, treasurer

Program for the 48th Annual Meeting Chemical Specialties Manufacturers Assn., Hotel Roosevelt, New York, Monday-Wednesday, December 4, 5 & 6

Monday Morning, December 4

9:00 A.M.—Board of Governors Meeting
Committee Meetings

Tuesday Morning, December 5

Automotive Division

Vanderbilt Suite
A. E. Tongue, presiding

9:00 A.M.

Au-1—Address of Division Executive Board Chairman—A. E. Tongue, Olin Mathieson Chemical Corp., Baltimore, Md.

Au-2—Labeling of Automotive Products Under Federal Hazardous Substances Labeling Act. No. 86-613—George T. Scriba, Union Carbide Corp., New York

Au-3—Auto Wash and Polish Concentrates—Daniel R. Pail, Dow Corning Corp., Midland, Mich.

Au-4—Antifreeze Evaluation by a Simulated Dynamometer Test—John G. Willard and Joel D. Watkins, Jefferson Chemical Co., Austin, Tex; delivered by: John G. Willard

Au-5—Sterilization of Interplanetary Vehicles — Charles R. Phillips and Robert K. Hoffman, U.S. Army Chemical Corps Biological Laboratories, Fort Detrick, Frederick, Md.; delivered by: Charles R. Phillips

Detergent and Cleaning Compounds Division

Oval Room
Lester D. Berger, Jr., presiding

9:00 A.M.

DC-1—Address of Division Executive Board Chairman—Lester D. Berger, Jr., Union Carbide Chemicals Co., division of Union Carbide Corp., New York

DC-2—CMC—An Anti-Redeposition Agent for Heavy Duty Liquid Detergent Systems — Jack B. Batdorf, Hercules Powder Co., Wilmington, Del.

DC-3—Phosphates in Heavy Duty Liquid Detergent Systems—Ray Liss and M. E. Tuvell, Monsanto Chemical Co., St. Louis, Mo.; delivered by: Ray Liss

DC-4—Hydrotropes in Heavy Duty Liquid Detergent Systems —Marvin Mausner, Ultra Chemical Works, Inc., Paterson, N. J.

Pesticide Division

9:00 A.M.

I-1—Address of Division Executive Board Chairman—Mark L. Hill, Gulf Oil Corp., Philadelphia, Pa.

I-2—Report of Scientific Committee—Joseph B. Moore (Chairman), McLaughlin Gormley King Co., Minneapolis, Minn.

I-3—Report of Educational Committee — George F. Kerbey (Chairman), Fairfield Chemicals Division, Food Machinery and Chemical Corp., New York.

I-4—Report of Market Development Committee—W. H. Foster (Chairman), Standard Oil Co. (Ohio), Cleveland, O.

I-5—Report of Lawn and Garden Products Committee—Cameron M. Baird (Chairman), Baird & McGuire, Inc., Holbrook, Mass.

I-6—Report of Chemical Analysis Committee—S. K. Freeman (Chairman), International Flavors & Fragrances, Inc., Union Beach, N. J.

I-7—A Review of World-Wide Malaria Eradication—Lawrence B. Hall, Technical Development Laboratories, Communicable Disease Center, USPHS, Savannah, Ga.

I-8—Panel Discussion on Face Fly — Moderator: Joseph B. Moore, McLaughlin Gormley King Co., Minneapolis, Minn.

I-8a—Face Fly Investigation in Maryland in 1961—J. H. Fales and O. F. Bodenstein, Pesticide Chemical Research Branch, Agricultural Research Service, U.S.D.A., Agricultural Research Center, Beltsville, Md.; delivered by: John H. Fales

I-8b—Controlling the Face Fly—John G. Matthysse and P. E. Ode, Cornell University, Ithaca, N. Y.; delivered by: John G. Matthysse

Waxes and Floor Finishes Division

Terrace Room
Earl Brenn, presiding

9:00 A.M.

W-1—Address of Division Executive Board Chairman—Earl Brenn, Huntington Laboratories, Huntington, Ind.

W-2—Petroleum Waxes in the Polish Industry—G. W. Skinner and M. E. Bolton, Bareco Wax Co., division of Petrolite Corp., Tulsa, Okla.; delivered by: George W. Skinner

W-3—Infra-Red Spectra of Emulsion Polymers for the Wax, Polish and Coatings Industries—Leonard Shapiro, Beacon Chemical Industries, Inc., Cambridge, Mass.

W-4—Poly-Em Latices in Floor Polishes—Walter J. Hackett and Bernard Berkeley, Foster D. Snell, Inc., New York and H. K. Stryker and R. E. Clark, Spencer Chemical Co., Merriam, Kans.; delivered by: Walter J. Hackett

Tuesday Afternoon, December 5

12:30 P.M.—Luncheon—Grand Ballroom
Address—Larry Coleman, general counsel, Allied Chemical Corp., New York
Presentation of the 1961 Aerosol Package Contest Awards —A. H. Lawrence, Jr. (Chairman, Aerosol Package Contest Awards Committee), E. I. du Pont de Nemours & Co., Wilmington, Del.

Aerosol Division and Disinfectant and Sanitizers Division

Joint Session—Grand Ballroom Foyer
George Barr and Claude J. D'Angio, presiding

2:15 P.M.

A-DS-1—Symposium on Germicidal Aerosols

A-DS-1a—Current and Potential Markets for Germicidal Aerosols—Henry Holloway, General Chemical Division, Allied Chemical Corp., New York.

A-DS-1b—Formulation of Germicidal Aerosols—John J. Sciarra, College of Pharmacy, St. John's University, Jamaica, N. Y.

A-DC-1c—Some Considerations in Formulation of Germicidal Pressurized Sprays—William Perlberg, Airkem, Inc., New York

A-DS-1d—Techniques and Problems of Filling Germicidal Aerosols—Montfort A. Johnsen, Peterson Filling & Packaging Co., Danville, Ill.

A-DS-1e—Testing Germicidal Aerosols—L. S. Stuart and L. F. Ortenzio, Pesticide Regulation Branch, Plant Pest Con-

trol Division, A.R.S., U. S. Department of Agriculture, Washington, D. C.; delivered by: L. S. Stuart

Detergent and Cleaning Compounds Division

Madison Room
R. K. Rigger, presiding

2:15 P.M.

DC-5—Alkali-Soluble Acrylic Emulsions as Stabilizers for Built Nonionic Liquid Detergents—David B. Fordyce, Robert E. Wolfrom and Jean Dupre, Rohm & Haas Co., Bristol, Pa.

DC-6—Phosphate Surfactants; Their Uses and Properties—R. L. Mayhew and Fred Krupin, Antara Chemicals Division, General Aniline and Film Corp., New York; delivered by: R. L. Mayhew

DC-7—Amphoteric Surfactants—New Products and Applications—Hans S. Manheimer, Miranol Chemical Co., Irvington, N. J.

2:15 P.M.—5:00 P.M.—Motion Picture Program—Vanderbilt Suite

Tuesday Evening, December 5

5:30 P.M.—9:00 P.M.—Company "Open House" evening. Lists available after 4:00 P.M. at registration desk.

9:00 P.M.—1:00 A.M.—"Club CSMA"—coffee, milk and doughnuts only—Madison Room

Wednesday Morning, December 6

General Session

Terrace Room
Charles E. Allerdice, Jr., presiding
(First vice-president, CSMA)

9:30 A.M.

G-1—Report of Nominating Committee—Leonard J. Oppenheimer (Chairman), West Chemical Products, Inc., Long Island City, N. Y.

G-2—Election of Officers and Board of Governors for 1962

G-3—Report of Secretary—A. A. Mulliken, Chemical Specialties Manufacturers Association, New York

G-4—Report of Treasurer—Frederick G. Lodes, Lodes Aerosol Consultants, Inc., New York

G-5—Report of Association Counsel—John D. Conner, Cummings & Sellers, Washington, D. C.

G-6—Panel Presentation on Federal Hazardous Substances Labeling Act—Moderator: Emil G. Klarmann, Lehn & Fink Products Corp., New York. Panelists: (6a) Robert E. Mason, Jr., Toni Co., Chicago; (6b) Honorable John L. Harvey, Deputy Commissioner, Food and Drug Division, Department of Health, Education, and Welfare, Washington, D. C.; (6c) Honorable William W. Goodrich, assistant general counsel, Food & Drug Division, Department of Health, Education, and Welfare, Washington, D. C.; (6d) Robert L. Ackerly, Cummings & Sellers, Washington, D. C.

G-7—Address—Richard C. Hottelet, commentator and news analyst, Columbia Broadcasting System, Inc., New York

12:30 P.M.

Luncheon—Grand Ballroom

Donald J. Templeton, presiding
(Second vice-president,CSMA)

"External Communications"
Address by the President of CSMA
Charles E. Beach
John C. Stalfort & Sons, Inc.
Baltimore, Md.

"Marketing Opportunities in the 'Sixties"
William W. Bryan
Vice-president
Humble Oil and Refining Co.
Houston, Tex.

Wednesday Afternoon, December 6

Aerosol Division

Terrace Room
J. J. Tomlinson, presiding

2:15 P.M.

A-1—Address of Division Executive Board Chairman—George Barr, G. Barr & Co., Chicago, Ill.

A-2—Aerosol Propellant Blends: I. Dimethyl Ether-Fluorocarbon—Robert J. Scott and R. R. Terrill, Union Carbide Chemicals Co., Tarrytown, N. Y.; delivered by: Robert J. Scott

A-3—Practical Aspects of the Free Piston Container—Robert S. Schultz, Bradley-Sun Division, American Can Co., Union, N. J.

A-4—New York City Fire Department Regulations on Use of Flammable Gas as a Propellant—E. F. Helfer, chairman, Aerosol Division Special Committee on New York City Fire Department Regulations

A-5—The Federal Hazardous Substances Labeling Act As Applied to Aerosols—Robert L. Ackerly, Cummings & Sellers, Washington, D. C.

Automotive Division

Vanderbilt Suite
N. F. Gurley, presiding

2:15 P.M.

Au-6—Report of Market Development Committee—C. A. Weslager, (Chairman) E. I. duPont de Nemours & Co., Wilmington, Del.

Au-7—Report of Scientific Committee—Robert C. Barker, (Chairman) Gulf Research & Development Co., Pittsburgh, Pa.

Au-8—Report of Program Committee—N. F. Gurley, (Chairman) Simoniz Co., Chicago, Ill.

Au-9—Report of Hazardous Substances Labeling Laws Committee—C. M. White, (Chairman) Olin Mathieson Chemical Corp., New Haven, Conn.

Au-10—Report of Products Committee—J. M. Hogrefe, (Chairman) Union Carbide Chemicals Co., division of Union Carbide Corp., New York

Au-11—Building a Sales Presentation—Charles Hooker, Florez, Inc., Detroit, Mich.

Disinfectant and Sanitizers Division

Madison Room
Arnold Lada, presiding

2:15 P.M.

DS-1—Address of Division Executive Board Chairman—Claude J. D'Angio, Airkem, Inc., New York

DS-2—Biological Activity and Applications of Organo-Tins—Robert J. Zedler and Charles B. Beiter, Metal & Thermit Corp., New York; delivered by: Robert J. Zedler

DS-3—Treatment of Hatching Eggs for the Prevention of Disease—Tevis M. Goldhaft, Vineland Poultry Laboratories, Vineland, N. J.

DS-4—Preservation of Wood Cooling Towers by Steam Sterilization and Chemical Treatment—Carl W. Regutti, Hagan Chemicals & Controls, Inc., Pittsburgh, Pa.

DS-5—The Hazardous Substances Labeling Act—Guidepost to the Disinfectant Industry—E. G. Klarmann, Lehn & Fink Products Corp., New York.

Waxes and Floor Finishes Division

Oval Room
Gerard R. DeNapoli, presiding

2:15 P.M.

W-5—New Concepts in Removability of Polymer Polishes—R. J. Turner, C. M. Lutes, K. S. Treviranus and P. L. Weyna, Morton Chemical Co., Woodstock, Ill.; delivered by: R. J. Turner

W-6—Maintenance Advantages of Detergent-Cleanable, Acid Removable Floor Polishes—Bertram Sayer, Henry Merken, Augustin La Torre and Harold Naidus, Polyvinyl Chemicals, Inc., Peabody, Mass.

W-7—Comments on Federal Hazardous Substances Labeling Act as It Relates to the Wax-Polish Industry—C. S. Kimball, Foster D. Snell, Inc., New York

Wednesday Evening, December 6

6:00 P.M.—Cocktail Party—Grand Ballroom Foyer
7:30 P.M.—Banquet and Eentertainment—Grand Ballroom

Alfred A. Mulliken,
secretary

Richard C. Hottelet
"World Outlook . . ."

Lawerence A. Coleman
"Resolving Industry's Problems . . ."

mobile simultaneously. Various materials used, and concepts and testing procedures employed were discussed. The novel principle of "controlled instability" emulsion systems was explained. Basic formulations were also presented.

"Antifreeze Evaluation by a Simulated Dynamometer Test" was reported on in a paper by John Willard and Joel D. Watkins of Jefferson Chemical Co., Houston, Tex. A laboratory test for evaluating the performance of automotive antifreeze was described in this paper. The test involves stripping an automobile engine of its pistons and valves and mounting the engine on a test stand along with a radiator, water pump and connecting hoses. Antifreeze solutions are circulated through this system under conditions closely simulating driving conditions, and the performance of the antifreeze is evaluated primarily on the basis of its ability to prevent corrosion.

The primary value of the test, according to the authors, has been in providing a more rigorous screening of experimental antifreeze formulations than has been available from glassware corrosion tests. The results are correlated with dynamometer and road tests, as well as with glassware corrosion tests. The authors do not propose that this test is adequate for final evaluation of an experimental antifreeze, for such approval still depends upon actual performance in a car.

Heavy duty liquid detergents were covered in three papers during the Dec. 5 morning meeting of the Detergent and Cleaning Compounds Division. At this session a new type of carboxy methyl cellulose designed for use with heavy duty liquid detergents was discussed by Jack B. Batdorf of Hercules Powder Co., Wilmington, Del. The new type CMC, specifically designed for use with heavy duty liquid detergents, is claimed to improve the performance and appearance of these detergents, according to Mr. Batdorf, who is a sales supervisor of Hercules' cellulose and protein department.

Mr. Batdorf said the new chemical was an extremely low molecular weight type of CMC which is compatible in heavy duty liquid detergents. In tracing the history of CMC, Mr. Batdorf pointed out that the discovery that CMC was an effective anti-redeposition agent played a major role in the development of synthetic detergents.

The new type CMC also possesses anti-redeposition action and imparts this property to heavy duty liquid detergents, he said. Because of the compatibility of the new CMC, detergent producers will also be able to market a clear product, Mr. Batdorf stated.

Phosphates and hydrotropes in heavy duty liquid detergent systems were discussed at the first meeting of the Detergent and Cleaning Compounds Division. A paper by Raymond Liss and M. E. Tuvell of Monsanto Chemical Co., St. Louis covered the use of phosphates, and Marvin Mausner of Ultra Chemical Works, Paterson, N. J., spoke on hydrotropes in heavy duty liquid detergents.

Two papers on the face fly were featured at the Dec. 5 morning session of the Pesticide Division. They were part of a panel, for which Joseph B. Moore, McLaughlin Gormley King Co., Minneapolis, was moderator. J. H. Fales of the U. S. Department of Agriculture, Beltsville, Md., reported on "Face Fly Investigation in Maryland in 1961" in a paper co-authored by Olga F. Bodenstein, also of U.S.D.A.'s Pesticide Chemical Research Branch, Agricultural Research Service.

A review of the use of "Petroleum Waxes in the Polish Industry" was presented in a paper at the Waxes and Floor Finishes Division meeting, the morning of Dec. 5. In discussing the past, present and future of petroleum waxes, George W. Skinner pointed out that wax refiners "recognizing the ever changing requirement of (the polish) industry . . . have continued to improve their products so that the polish manufacturer can produce higher quality products at low cost." His co-author was M. E. Bolton, also of Bareco Wax Division of Petrolite Corp., Tulsa, Okla.

Two other papers were
(Turn to Page 135)

Petroleum Waxes in Floor Polish

By using modern waxes and sound formulation, hardness of polishes can be controlled within limits in which important properties such as gloss, lack of slipperiness, low dirt pick-up and retention, reach optimum range

By G. W. Skinner and M. E. Bolton*,
Bareco Wax Co., Division,
Petrolite Corp.
Tulsa, Okla.

WAX is something of an all-encompassing term which has been used down through the ages to designate a variety of unrelated products. Many substances, which today are classified as waxes, bear no relationship to each other from a chemical standpoint. The term "wax" was probably first applied by ancient civilizations to beeswax. As time passed and other materials which resembled beeswax in appearance and physical properties were discovered, the term was broadened to include such materials, until today we have a host of substances listed under the general classification "wax." These substances range all the way from the paraffin waxes derived from petroleum, which are predominantly straight chain hydrocarbons, to beeswax, which is an extremely complex mixture of hydrocarbons, alcohols, acids, and esters, all of high molecular weight.

Wax has been referred to, quite justifiably, as "man's first plastic." (1) The one property common to all the various substances classified as waxes is their thermoplasticity. This is the property which has made them so useful to mankind in the various arts and crafts down through the centuries. Histories of ancient civilizations are dotted with references to the role of waxes in the daily lives of the people. Waxes such as beeswax, Chinese insect wax, spermaceti, wool wax and tallow have been known and used by mankind for many centuries in many varied applications. Of somewhat more recent discovery are such waxes as carnauba, ouricury, and candelilla. While the existence of these waxes was undoubtedly known for many years, their exploitation on a commerical scale occurred only during the past century. In addition to the insect, vegetable, and animal waxes previously mentioned, the existence in central Europe of several substantial deposits of so-called "earth wax" or Ozokerite had been known for a long time. The crude material needed to be refined, however, in order to obtain a useful product. It was not until the late 19th century that practical refining methods were developed, and these waxes then became useful articles of commerce. Industry was thus provided with a somewhat larger and more dependable source of waxy raw materials than had been available previously and applications for waxes were expanded.

All of the waxes so far mentioned were relatively expensive products and found applications mainly in specialty uses where cost was not too important a factor. It was not until the petroleum industry, in the early part of the present century, began segregating and re-

G. W. Skinner

M. E. Bolton

* Paper presented during 48th annual meeting, Chemical Specialties Manufacturers Association, New York, Dec. 5, 1961.

fining that fraction of crude oil commonly referred to as paraffin wax, that large tonnage uses for waxes developed. Here was a product, or more accurately, a whole series of products available in abundant quantities, at very low cost from a highly dependable source. This bright picture was further enhanced a few years later when the petroleum industry learned to separate microcrystalline waxes from residual oil stocks and began refining them. These developments opened up vast new fields of application for waxy materials. One of the largest of these new applications, and from the point of view of service to mankind, one of the most important, was food packaging. It has been said, and rightly so, that petroleum waxes brought to a close the cracker barrel era and made possible our present food distribution system. (2)

Petroleum Waxes

The types of petroleum waxes which were found so useful by the food packaging industry were not applicable in a large way in floor polishes, however. True, certain paraffin waxes have been used in some types of polishes, notably paste polishes, to some extent; but the low melting point, flexible grades of microcrystalline wax were just too soft and tacky for this type of application. It was not until the high melting point, hard microcrystalline waxes, the so-called "tank bottom" waxes, became commercially available that the polish industry developed any substantial interest in petroleum waxes.

During the Second World War, the tank bottom waxes were used in polishes as extenders for carnauba wax which was difficult to obtain at that time. Through the war years, there was only limited production of these high melting point microcrystalline waxes because most of the wax refining facilities in the country were devoted to producing the softer grades so essential to the war effort. Whatever was produced, however, found a ready market in the polish industry.

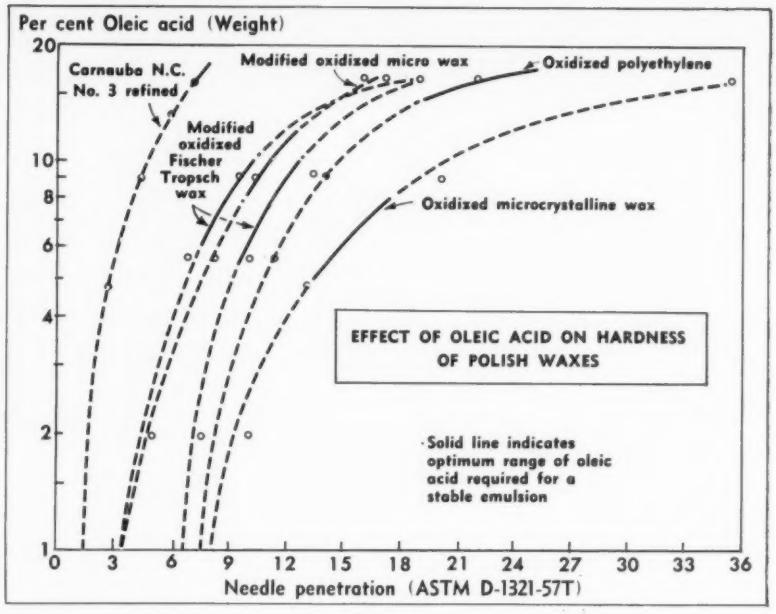

Per cent Oleic acid (Weight)
20
10
8
6
4
2
1
Carnauba N.C. No. 3 refined
Modified oxidized micro wax
Oxidized polyethylene
Modified oxidized Fischer Tropsch wax
Oxidized microcrystalline wax
EFFECT OF OLEIC ACID ON HARDNESS OF POLISH WAXES
Solid line indicates optimum range of oleic acid required for a stable emulsion
0 3 6 9 12 15 18 21 24 27 30 33 36
Needle penetration (ASTM D-1321-57T)

Figure 1

After the war was over and laboratory time could once again be devoted to research for peacetime purposes, the petroleum wax refiners began investigating methods of modifying their waxes in order to broaden their application in industry. This decision was made even though at the time tank bottom waxes were in short supply due to a scarcity of raw materials. It was reasoned, however, that with increasing demand for petroleum products by an expanding economy, the supply situation would be alleviated through increased crude oil production. This, of course, proved to be the case, and in a few years tank bottom waxes were in ample supply.

Emulsion Polishes

The search for new markets naturally led to the emulsion polish industry. Here was a rapidly growing industry whose products were based largely on high cost, imported raw materials. These factors induced the refiners of tank bottom waxes to investigate the possibility of modifying their waxes so as to make them emulsifiable, and hence suitable for use in emulsion polishes. The most productive approach to this problem was via the oxidation route. In the late 1940's several products of this type became commercially available and met with quick acceptance by the polish industry. The properties of these products were such that they were quite useful as partial replacements for, and extenders of, the more expensive carnauba wax.

As experience was gained, both in oxidation techniques and in formulation of polishes with these products, improvements were made in them and they soon became a very important raw material to the polish maker. Because of the important status they achieved, numerous studies have been made over the years of emulsion systems involving oxidized microcrystalline waxes. Some of these studies were quite informative and aided in the development of improved products. The study presented in this paper is a somewhat different approach from any previously published.

Film Properties

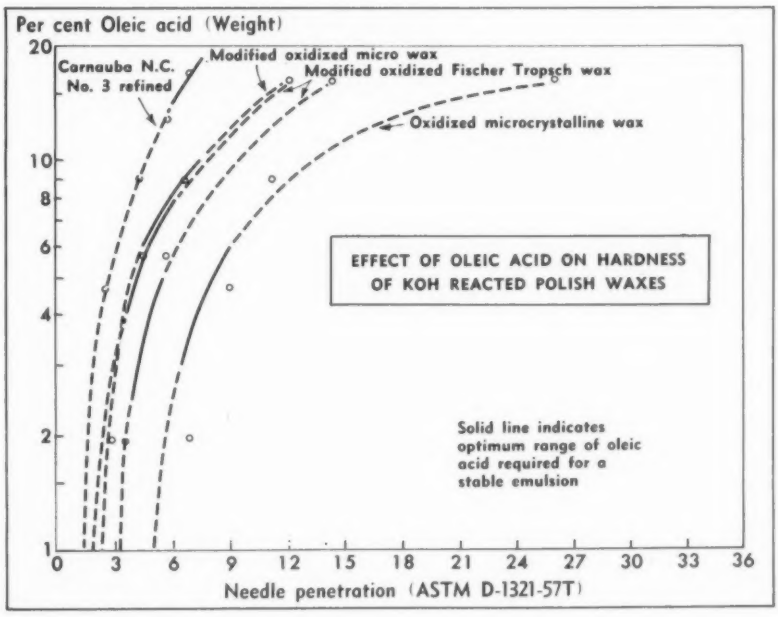
Some of the more important properties of polish films are high initial gloss, high resistance to scuffing and abrasion under traffic, and resistance to dirt pickup. On the premise that the latter two

properties are related to the hardness of the film, we have determined needle penetration values, as a measure of hardness, of a number of polish raw materials, various combinations of these raw materials and of the polish films derived from them. The values were determined by the method described in ASTM D-1321-57T, which is the standard method used by the petroleum industry to determine hardness of waxes. While hardness, as determined by the needle penetrometer is admittedly not the whole answer so far as polish films are concerned, since this method does not differentiate between brittleness and toughness, it does show the effect of the various components of a polish formula on each other and how these effects are reflected in the polish film.

In our approach to this work we selected some of the materials most commonly used in polish formulations and determined the effect of oleic acid on them. The results are shown in Figure 1. Each material was blended with varying amounts of oleic acid from 0 to 20 parts of oleic per 100 parts of wax. For plotting purposes the values were calculated to a percentage basis. The graph for each material shows clearly the softening effect of oleic acid on that particular material. The portion of each curve represented by a solid line indicates the percentage of oleic acid required to produce a stable emulsion with each material. As can be readily observed, carnauba wax is least affected by oleic acid and oxidized microcrystalline wax is softened most. The solids recovered from an oxidized polyethylene emulsion, however, would be softer than those from an oxidized microcrystalline wax because of the greater quantity of oleic acid required to achieve emulsification.

Possibly the most significant point to notice in this graph is that the oleic acid requirement for the oxidized microcrystalline wax and the oxidized polyethylene lies in the critical part of the curve where small variations in oleic acid content have a very great influence on the penetration of the resulting blend. The same is true but to a lesser degree with the modified oxidized microcrystalline wax and the modified oxidized Fischer-Tropsch waxes. In the case of carnauba, rather larger variations in oleic acid can be made without influencing the penetration of the resulting blend appreciably.

Figure 2


Per cent Oleic acid (Weight)
20
10
8
6
4
2
1
Carnauba N.C. No. 3 refined
Modified oxidized micro wax
Modified oxidized Fischer Tropsch wax
Oxidized microcrystalline wax
EFFECT OF OLEIC ACID ON HARDNESS OF KOH REACTED POLISH WAXES
Solid line indicates optimum range of oleic acid required for a stable emulsion
0 3 6 9 12 15 18 21 24 27 30 33 36
Needle penetration (ASTM D-1321-57T)

Perhaps it should be pointed out at this time, for the benefit of those who are not familiar with needle penetration hardness values, that the difference in hardness between a material having a 6 penetration and one having a 15 penetration is quite considerable. It is rather difficult to make an impression with the thumbnail on a wax having a 6 penetration; whereas, one having a 15 penetration is quite easily indented in this manner. When we move on up to the 20 penetration range, we begin to approach the region of the soft, tacky laminating waxes. For those who are familiar with Bareco products, these various penetration ranges can be visualized as being roughly equivalent to "Be Square" 190/195 in the 6 penetration range, "Starwax" 100 in the 14 range, and "Ceraweld" in the 20 range.

The next step in the investigation was to determine what effect, if any, resulted after these various materials had been reacted with KOH. To do this each of the five materials was blended with varying amounts of oleic acid over the range 0 to 20 parts oleic acid per 100 parts of wax. The resulting blend was then reacted with two parts of technical grade KOH per 100 parts of blend for 15 minutes at 250°F., the KOH being added slowly as a hot, saturated solution to the molten wax heated to the specified temperature. The same procedure for determining hardness was followed as in the preceding experiment and the results are shown in Figure 2. Unfortunately, the reaction product from the oxidized polyethylene was so viscous that sufficient air was trapped in the product to make it spongy. It was impossible to obtain needle penetration values on the product so it had to be discarded.

Again we have plotted percentage of oleic acid in the blend against needle penetration values. A comparison of the two charts shows that in every case, with the exception of carnauba wax, the curve has been shifted to the left indicating that the KOH reaction

product is harder than the original wax and that it retains this additional hardness as oleic acid is added. It is interesting to notice that the KOH reaction has had practically no effect on carnauba wax. The curve of the KOH reaction product in this case is practically identical with that of the original wax.

While the increase in hardness achieved by reacting the oxidized microcrystalline and the oxidized Fischer-Tropsch wax with KOH is important, even more significant is the fact that the amount of oleic acid required to produce a stable emulsion has been altered. Here also the solid line in each curve indicates the range of oleic acid required for good emulsification. It will be observed that in each case, again with the exception of carnauba wax, the amount of oleic acid required has been reduced but, even more important, the quantity required has been shifted to a less critical part of the curve. This means that considerably greater variations in oleic acid content in the emulsifier system can be made without seriously affecting the hardness of the end product. It should be noted also that in each case the hardness of the emulsified wax is either in the same range as that of emulsified carnauba or is slightly harder.

As mentioned previously, the KOH reaction product from oxidized polyethylene was too spongy in texture to obtain penetration values. When we reached a blend of 100 parts of this product with 20 parts of oleic acid, we finally obtained a compound on which we could get a penetration value. This turned out to be 16.8. Comparing this with the same blend of oxidized polyethylene and oleic acid on the previous graph, it can be seen that the KOH reaction has had a hardening effect on the oxidized polyethylene, also.

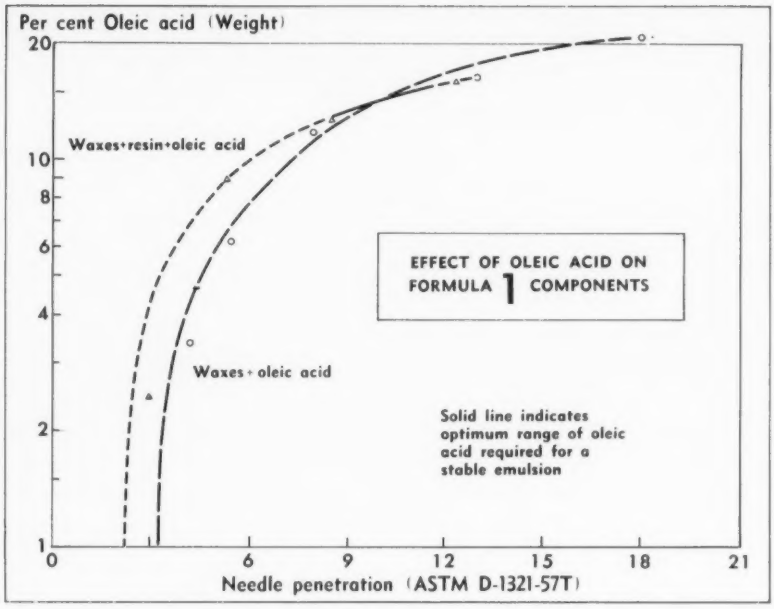


Figure 3

Polish Formulations

To carry this investigation through to actual floor polishes, we selected three polish formulations. One of these was an older type which was quite popular a number of years ago and involved the use of a so-called "wax soluble" resin and high percentages of oleic acid. The other two are more modern types in which no resin is used and the oleic acid content is greatly reduced. The three emulsion formulas are shown in Table I.

To study the effect of the various components of each formula on each other, as well as the effect produced by varying amounts of oleic acid, we broke each formula down as shown in Table II and blended the components with oleic acid over a range. Since the effect of oleic acid on the individual waxes in each formula was shown in Figures 1 and 2, we used only the composite blend of wax solids in this case. The numerical values of needle penetration thus obtained are shown in Table II.

These results are shown graphically in Figures 3, 4 and 5. For purposes of correlation the values in Table II were calculated to a percentage basis. In the interest of clarity, it was necessary to plot each formula on separate graphs.

(*Turn to Page* 272)

Table I. Polish Formulas

A. Wax Emulsion

	1	2	3
Oxidized microcrystalline wax	25	—	20
Modified oxidized Fischer-Tropsch wax	—	50	—
Microcrystalline wax	—	—	30
Carnauba N. C. No. 3 refined	50	—	—
Montan derived wax	—	20	20
Oxidized polyethylene	—	30	30
"Wax soluble" resin	25	—	—
Oleic acid	17	3	4
Triethanolamine	20	—	—
Ammonium hydroxide (26° Be)	3	—	—
KOH	—	2	2
Morpholine	—	10	10
Water	To make 14% solids		

B. Finished Polish

Wax emulsion	80
Leveling resin solution	20

new!
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polymers
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that "lock"
on to floors
and last
for months
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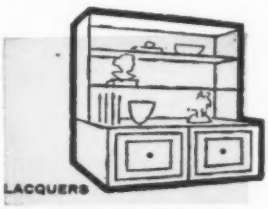
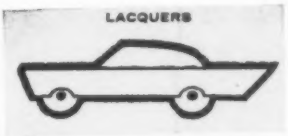
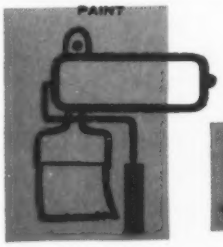
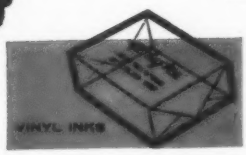
Want more information on 2-NP for Vinyls and Epoxies?

If you would like to have test samples and complete technical data on 2-Nitropropane for your vinyl and epoxy formulations, fill in and mail the coupon below.









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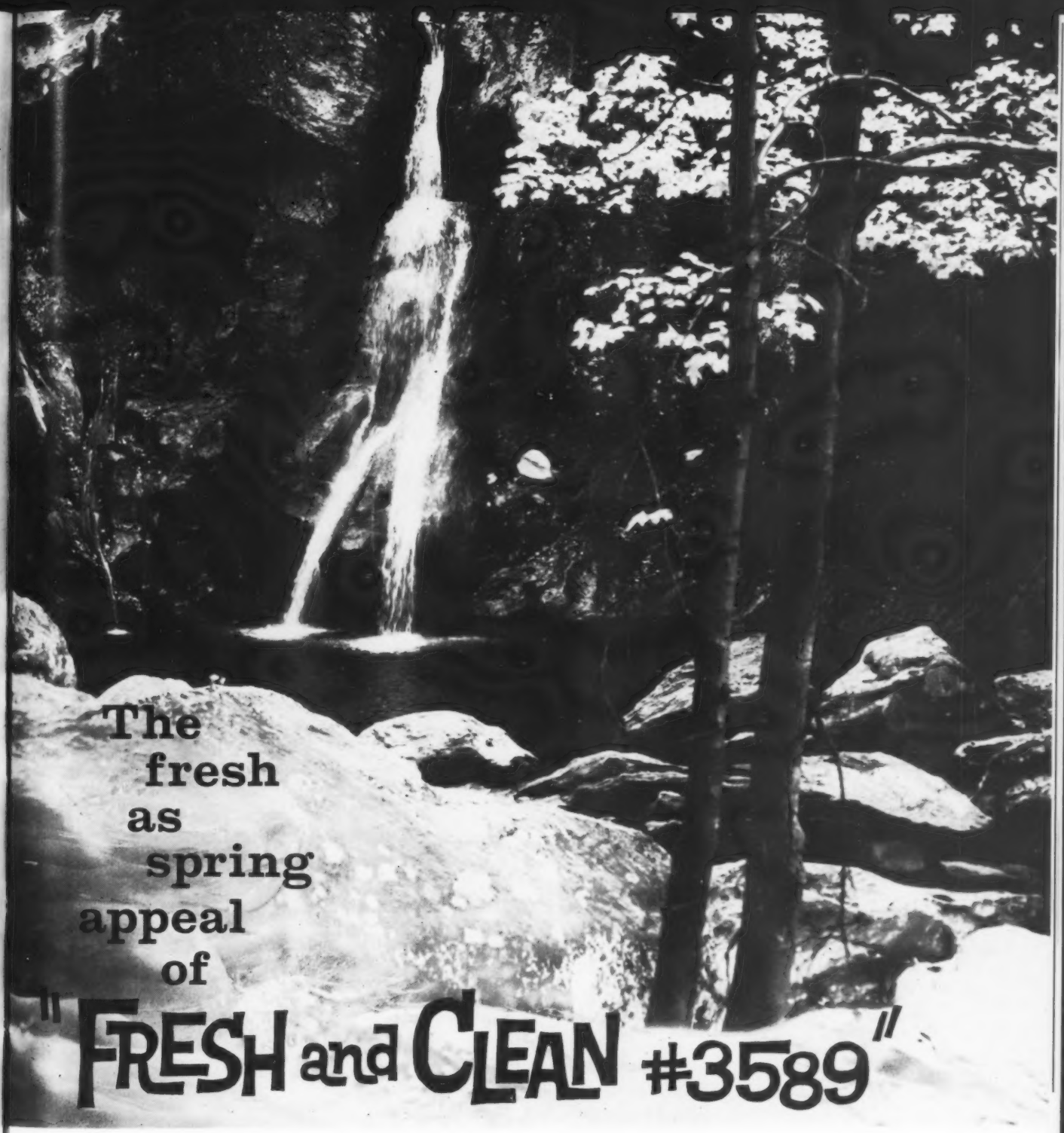

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Technical Personnel Problems

By Henry Leonard,
Morley Personnel Associates, Inc.,
New York

NEVER before have there been so many job opportunities in the chemical specialties industry for technically trained personnel; paradoxically, never before have companies been so dilatory in hiring. An appraisal of this unrealistic situation seems in order.

A cursory glance at the Help Wanted classified advertising sections of metropolitan newspapers or trade journals will demonstrate the vast number of jobs available. Added to these are the number of positions handled by technical recruiters, management consultants and professional employment agencies who are constantly on the lookout for qualified people.

Why the Need

Why are there so many situations open? The increasing complexity of time consuming investigations; the greater interrelationships of the various sciences; the rapidly increasing mass of information in the literature in need of review and assimilation; the new, elaborate instrumentation equipment,—all have created the need for additional personnel for the advancement of technology.

Those who are concerned with the chemical specialties industry – in management, production, engineering, sales, marketing, research and development – know how dynamic an industry it is. From a wash tub, basement-size production infant, the enterprise has developed into a giant, with its influence affecting every individual.

Millions upon millions of dollars are invested in production facilities, in pilot plant operations, in research and development, with hundreds of new products available each year. The ability to take raw materials with little or no value and transform them into more useful products; the ability to synthesize new compounds, these are the achievements of scientists.

Manpower must be devoted to search, to trials, even though there is no guarantee of success. The realization that even the best planned and most carefully conducted program will not necessarily yield a marketable product does not deter continued investigations. Pursuit of these objectives is required by the intense competition.

Research is Costly

Few companies can afford the tremendous expenditures made by Du Pont in the development of synthetic fibers. It was estimated that over $80,000,000 were devoted to this project before the first yard of "Dacron" was sold. Yet, each laboratory, in its own way, contributes to the progress of the industry. All research obviously does not require a great number of chemists and chemical engineers or vast appropriations. The nature of the problem and the complexity of the product determines the attention which is required. In fact, many successful compounds are the result of incidental, nay accidental, discovery.

While many compounds never leave the laboratory, others are instant successes. Compounds are often made for which there is no known use. Yet a vigorous investigation, coupled with a strong marketing program, will oftimes result in a profitable, salable product.

The recent introduction of cosmetics to simulate sun tanning illustrates this point. A laboratory produced a compound which was known to darken skin. As a component of a liquid for cosmetic use, it offered promise as an easy-to-apply coloring agent. A saturation advertising program, after dermatological testing, induced thousands to buy and try the product. It was a quick financial success. What the future will hold for this particular compound, or others like it, is unknown. The answer is that at the moment there are countless others being investigated that may be the successes of the future.

It is, therefore, a reasonable

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assumption that this demand for qualified personnel reflects a permanent or constant need.

Training is Required

Each investigation requires trained minds and hands. More than a half billion dollars are invested by chemical companies each year in furtherance of product research. Chemical technicians, a recent study indicated, virtually all had college degrees, mainly in the chemical field. Three of every four had gone on to graduate study, with half of them getting their Master's degree . . . and one of every four, a Doctorate.

Most of these specialists have stayed with the industry from the start of their careers, nine out of 10 since graduation; and 60 per cent has worked for just one or two companies. Their interest and ability have paid off to the extent that the following ranges were reported as annual salaries:

$18,000 or more	11%
14,000–17,999	14%
10,000–13,999	41%
8,000– 9,999	14%
5,000– 7,999	19%
under– 5,000	1%

Salaries are important in the budget of a company but are only part of the cost. In addition, there must be included the expense of employee insurance, benefit plans, payroll taxes, as well as employee facilities, up to date libraries, tuition reimbursements, paid professional association memberships, etc. Major corporations estimate the expense per year of a technical employee to be double his annual salary.

Chiefs or Indians?

It was noted earlier that despite the number of positions available, and the apparent scarcity of qualified personnel, companies are slow to hire. To a great extent, there is an unconscionable reluctance to employ other than "outstanding" candidates. Be it snob appeal, prestige value or an honest need for the higher level of training, many companies are overly Ph. D. minded.

Not every man available is competent to be an independent researcher–not every job requires this ability. Not every man is or was an "A" student–more are included within the middle of the class than the top tenth. Not every man is creative or imaginative–but there is a need for doers as well as thinkers. Not every trainee has supervisory potential – conversely, not every man aspires to be a research director or chief engineer. There are relatively few chiefs; there are many more indians. But the indians, in their own way, are equally as important as the chiefs.

Realistic Evaluation

A realistic evaluation of the actual manpower requirements of a job will often justify the hiring of "good" skills rather than "outstanding" talent. Too frequently an employer's overestimation of job needs leads to dissatisfaction on the part of the bored employee . . . a feeling of unfulfillment in his work. To the employer it means costly, wasted training, and low job stability.

In today's market, there should be a job available for almost every man who has reasonable skills and training provided his abilities are utilized properly.

Job Requirements

Few men fit the "mold", the job specifications drawn up when a position is established. Yet some employers would appear to be satisfied with no one less than a Dr. Melvin Calvin, the recent chemistry Nobel Prize winner. They search and search *ad infinitum*.

Personnel recruiters can recite chapter and verse when they tell of excellent candidates who have been presented for consideration yet were passed up with comments such as, "He is *almost* what we want but let's see some others." There are such objections as:

"He is too specialized."

"He isn't specialized enough."

"He is too young and immature."

"He is too old for our management group."

"He has no growth potential."

"He is an Easterner . . . we want a Westerner."

"He has a Master's degree and five years of experience. We want a Ph. D. with no more than three years of experience."

Procrastination

As research projects fall behind schedule, as pilot plant runs are postponed indefinitely, employers often reconsider and attempt to reactivate "almost right" candidates. But it is generally too late. Other companies, more appreciative of today's labor market, will have gathered them to their fold.

When a man is employed and decides to better his situation, he can usually afford to wait and chose the opportunity which is best suited to his interest. But when a man is at loose ends, for whatever reason, and has been interviewed and reinterviewed for a particular position, waiting for a decision can be a frustrating experience.

In so far as is possible, job decisions should be made within a reasonable time. If the answer is "no" then it should be forthcoming without delay. And the negative answer should be by letter or other communication that will establish a definite finality to the matter. Even after extended interview sessions, it is not uncommon for some companies simply to ignore a candidate and assume an absence of contact will indicate no further interest.

Some fully authorized department heads and other supervisors are reluctant to assume final responsibility for hiring. They need support for their decision and seek group approval before they make a definite offer to a candi-

Never before have there been so many jobs open in the chemical specialties industry for technically trained personnel; never before have companies been so dilatory in hiring. An expert gives reasons, remedies. Job specifications unrealistic.

date. Sort of a sharing of grief if the candidate, after employment, fails to perform as anticipated. Psychological testing is a handy tool used by personnel departments on prospective employees. Psychiatric guidance might be in order for some vacillating employers.

Job Specifications

Job specifications are frequently unrealistic. The classic recruitment order is for an Ivy League school Ph. D., top man in his class, with ten years of specialized experience, preferably an ex-Captain in the Marines, but at least a Lieuteant; yet not over 29 years of age. Fanciful? Perhaps, but it is amazing how close to this type are some job descriptions. Our current client searches are more realistic and are based on functional requirements, as indicated below:

Associate director, cosmetics company, with a basic objective of creating and formulating new and improved products. Functionally, he would devolop manufacturing formulae and processes for products assigned and maintain a continuous research program in his product group.

A formulation chemist with experience in the household chemicals field, responsible for the creation of new product ideas, and the carrying out of product development; conducting or supervising product evaluation and storage tests, and coordinating packaging and pilot plant work.

Chemist with experience in synthesis, compounding and application of surface active chemicals; well versed in know-how of fatty alcohol sulfation, with plant processing knowledge.

An advanced degree chemist, preferably with practical experience in technical service and applications work in the field of surface active chemicals; conversant with all types, anionic, nonionic and cationic, as to formulation and use in a wide variety of industrial applications; supervisory responsibility; some market research and product evaluation interest.

Chemist with experience in the compounding of specialities such as industrial cleaners, paint strippers and carbon removal compounds.

Chemist with experience in metallic soaps, surface active agents and detergents.

Group Leader, Ph. D. in chemistry, with experience in planning, establishing and supervising a program of development in detergents, aerosols, shampoos and other hair preparations.

Over-qualifying job requirements is just as inconsistent as under-appraising educational and experience histories. A reasonable middle level lends itself more readily to company and employee satisfaction.

Time to Change?

Previous remarks have been directed toward management. Let us now look at employment from the technician's point of view. Personnel consultants are often asked. "When is the right time to look for a new job?" Our best recourse is to the words of Shakespeare in *Julius Caesar* . . .

"There is a tide in the affairs of men,
Which, taken at the flood, leads on to fortune."

(iv,3)

The reasoned approach is first to take stock! Have you been progressing at a slower rate than your associates with equivalent academic training and experience? Are others with less apparent skills moving along faster? Are you pigeonholed because you are too specialized and thus too valuable in your present slot to move upwards? Are you so skilled a technician that you are relegated to the bench with no opportunity to advance to supervisory responsibilities? Do you take an interest in matters outside your own department? Have you been keeping up with the literature; taking additional courses to supplement your knowledge? Are you progressive in your work habits and attitudes?

For Employers

Now for your employer! Is the company's growth at least equivalent to the rest of the chemical specialties industry? Is the product line sufficiently diversified to insure stability? Is management progressive and alert to new ideas?

Evaluate the complete situation carefully. Consider your time investment, your seniority, your relative compensation. Realize that while opportunities are plentiful, demands are high. If, on balance, your present situation is not as bad as you thought originally, forget about a change and do your best to improve yourself where you are. But . . . if you decide that new investigations are wise, then make a methodical search of all possibilities open.

Finding a new Job

There are many avenues to follow. Almost any amateur jobseeker can secure interviews through friends, business and professional associates, or similar "contacts". But this sort of random

(Turn to Page 170)

IN YOUR FLOOR POLISHES WITH NEW

PETROLITE C-8500 WAX

Bareco's new approach to emulsifiable waxes has created Petrolite C-8500, which emulsifies readily with *as little as one-fourth the amount of oleic acid as required with ordinary waxes.* By drastically reducing the oleic acid required for emulsification, the original hardness and toughness of the wax is retained in the polish film.

Based on Fischer-Tropsch wax, Petrolite C-8500 imparts a very light-colored film that resists darkening on aging, and is highly rebuffable.

To help you formulate superior polishes at lower cost, we'll be pleased to provide a *free sample* of Petrolite C-8500 Wax and a sample of our suggested emulsion made with it. Write today for your samples and complete information.

After all, nothing polishes like wax!

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Acid Number	6.5/8.5
Saponification Number	25/35

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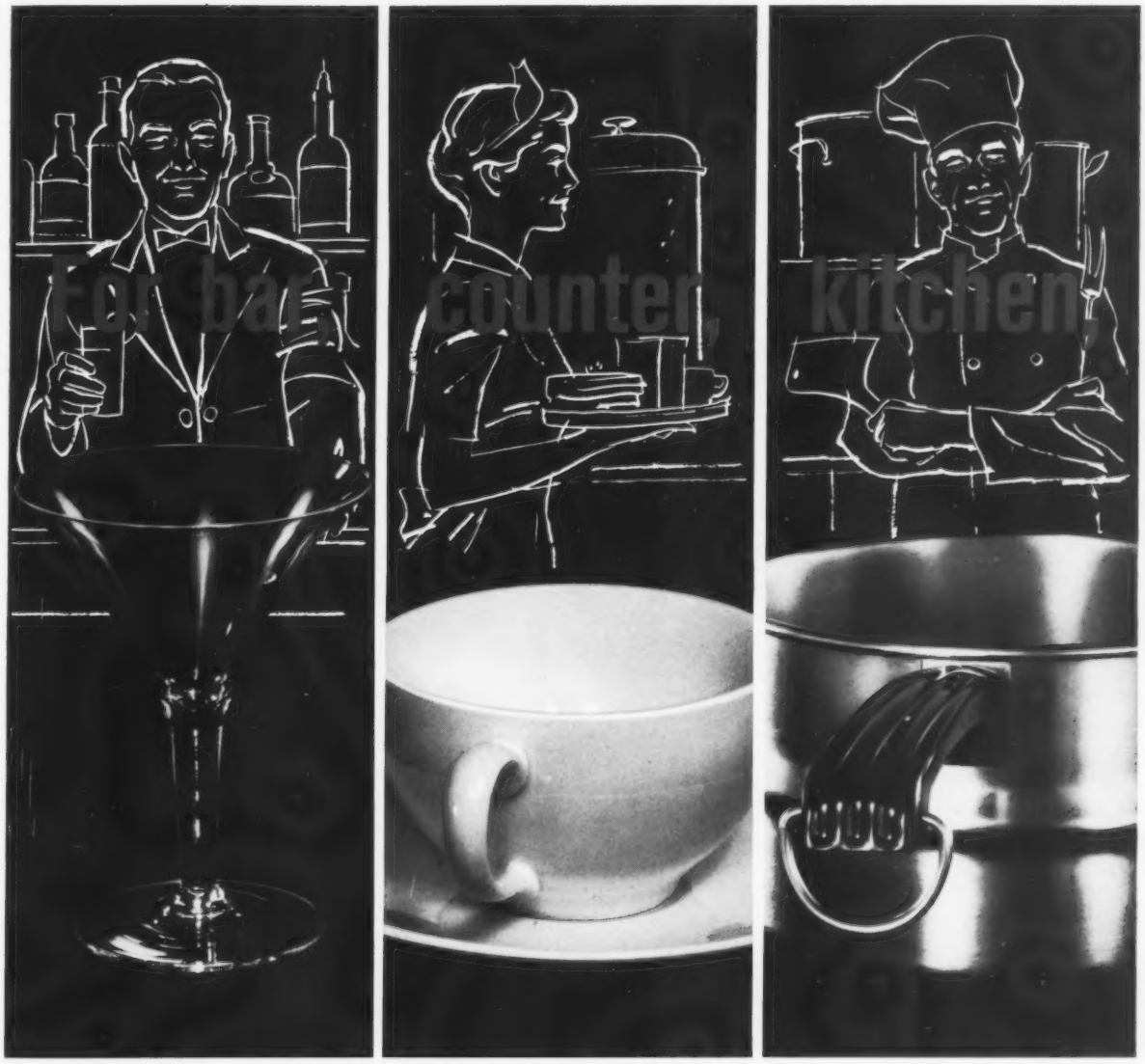

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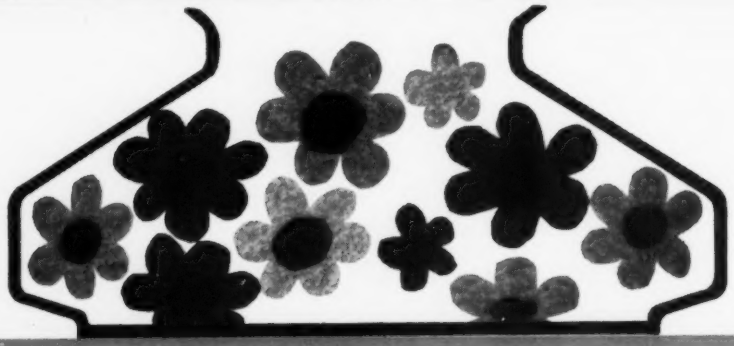

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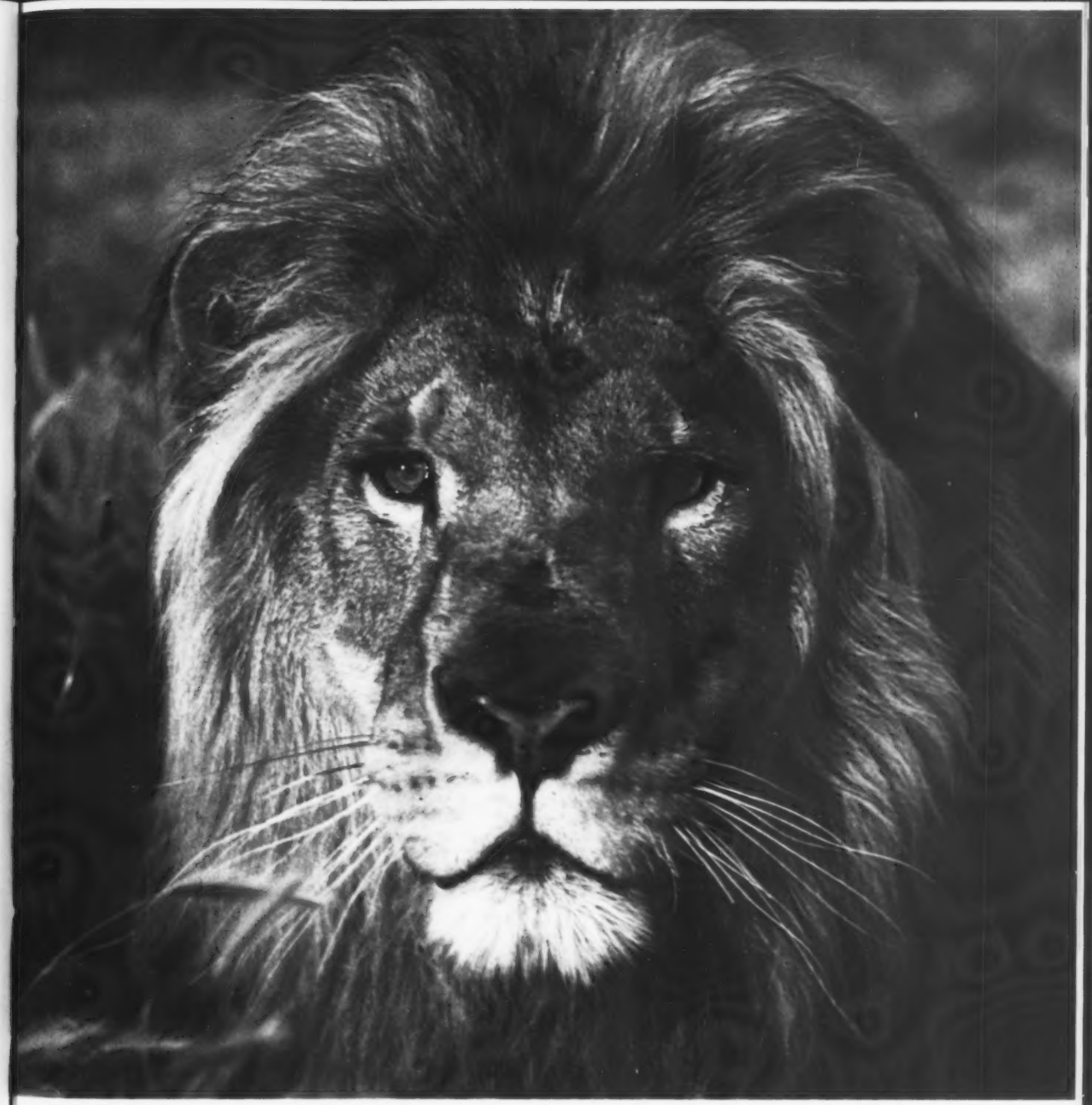

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Newly elected officers and directors of Canadian Manufacturers of Chemical Specialties Assn., left to right: Paul J. Ammann, director; D. B. Ross, treasurer; J. H. Morrow, director; A. Robins, president; R. L. Jones, immediate past president; G. V. Jansen, director; J. D. Caldwell, secretary; R. F. Byrnes, director; J. Chevalier, manager; E. L. Clifton, vice-president, H. A. Keeping, director. Missing from photograph George E. Flemming, F. K. Staples, directors, and D. A. S. Lee, vice-president.

Canadian Specialties Meeting

NEW developments in chemical specialties from the standpoints of formulation, marketing and product application, were among the highlights of the formal discussion portion of the program for the fourth annual meeting of the Canadian Manufacturers of Chemical Specialties Assn., held Oct. 30-Nov. 1, at the Royal York Hotel, Toronto. Attendance at this year's meeting was 242, as against 226 in 1960. The theme of the fourth annual CMCS meeting was "Canada and the Industry Developing Together.

Other notable features of the meeting were the election of officers and directors for the coming year and the announcement of the winners of the first Canadian Aerosol Package Contest.

Plaques were awarded to winners and honorary mentions in nine product categories and to the "best package in show." "Mint Klean Air," a product of Avon Products of Canada, Ltd., judged the winner of the room deodorants category also took top honors as the best package in the competition. Award winners were:

Automotives — Winner: "Wood's Ice Off," by G. H. Wood & Co.; Honorary mention: "Rust-Gard," by Corrosion Service, Ltd.

Insecticides, Repellents and Moth-Proofers — Two honorary mentions: "Livestock Bomb," by Green Cross Products, and "Nok-Out," by Frank T. Ross & Sons, Ltd.

Room Dodorants — Winner: "Mint Klean Air," by Avon Products of Canada, Ltd.; Honorary mentions: "O-Cedar Air Care," by O-Cedar of Canada, Ltd., and "Air Fresh," by Frank T. Ross & Sons, Ltd.

Paints, Enamels, Other Protective Coatings and Paint Removers—Honorary mentions: "Cilux Spray," Canadian Industries, Ltd., and "Metaltone," by Frank T. Ross & Son, Ltd.

Other Household Products—Winner: "O-Cedar Bowl Bath," by O-Cedar of Canada, Ltd.; Honorary mentions: "O-Cedar Instant Torch," also O-Cedar, and "Shoe Polishes," by Packer Exports, Ltd.

Shave Products: "Yardley Shaving Foam," by Yardley of London (Canada), Ltd.; Honorary mentions: "Pink Flush," by Helene Curtis, Ltd., and "Stag," by Rexall Drug Co., Ltd.

Hair Preparations: Two honorary mentions: "Sheer Touch Hair Spray," by Avon Products of Canada, Ltd., and "Spray Net Supra Deluxe Regular," by Helene Curtis, Ltd.

Perfumes, Colognes, and Toilet Waters — Winner: "Tweed Mist Toilet Water Spray (Lentheric)," by Helene Curtis, Ltd.; Honorary mention: "Shari (Cara Nome)," by Rexall Drug Co., Ltd.

Medicinal and Pharmaceutical Products—Honorary mention: "Trypure Novo Spray," by Nordic Biochemicals, Ltd.

New officers and directors elected at the business meeting on Nov. 1, include: President, A. Robins of Cartier Chemical Co., Lachine, Quebec; vice-presidents, Don A. S. Lee, Du Pont of Canada, Ltd., Montreal and E. L. Clifton, R. M. Hollingshead Co. of Canada, Ltd., Bowmanville, Ont.; secretary, J. D. Caldwell, Diversey Corp. (Canada), Ltd.; treasurer, D. B. Ross, Aerosol Packaging of Canada, Ltd., Scarborough, Ont.

Directors: G. V. Jansen, S. C. Johnson & Son, Ltd., Brantford, Ont.; R. F. Byrnes, Rohm & Haas Co. of Canada, Ltd., West Hill, Ont.; J. H. Morrow, Canada Rex Spray Co., Brighton, Ont.; Paul J. Ammann, G. H. Wood & Co., Toronto, Ont.; George E. Flemming, Natural Products Corp., Montreal, Que.; F. K. Staples, Procter & Gamble Co. of Canada,

NAME OF WAX	M.P. A.S.T.M. D-127-30	PENETRATION 100g/77°/ 5 sec.	COLOR N.P.A.	ACID NUMBER	SAPONIFICATION VALUE	TYPE
Cardis Polymer #10	212-216	0-1	1-1½	8-10	25-30	Polymer
Cardis Polymer #8Ⓟ	205-210	1-2	3-5	7-10	24-28	Polymer
Cardis 935	210-214	2½-3	1-1½	16-18	38-42	Polymer
Cardis OneⓅ	195-200	1-2	4-5	12-16	45-55	Emulsifiable Petroleum Wax
Cardis 314Ⓡ	184-189	4-6	4-5	13-16	45-55	Emulsifiable Petroleum Wax
Cardis 319Ⓡ	180-185	5-7	4-6	18-20	65-70	Emulsifiable Petroleum Wax
Cardis 320Ⓡ	180-185	5-7	4-5	28-30	75-80	Emulsifiable Petroleum Wax
Cardis 262Ⓡ	195-200	3-5	Brown	14-17	40-45	Specially Processed Petroleum Wax
PolymekonⓅ	195 MIN.	0-3	Yellow	0-0	0-0	Specially Processed Petroleum Wax
Warco BP 10	300-320	6½	Yellow	0-0	0-0	Specially Processed Petroleum Wax
FortexⓇ	190-200	3-5	2½-3½	0-0	0-0	Microcrystalline Hard & Plastic
MekonⓇ Brown	190-195	3-5	Brown-Black	0-0	0-0	Microcrystalline Hard & Brittle
MekonⓇ Amber	190-195	3-5	Amber 6 Max.	0-0	0-0	Microcrystalline Hard & Brittle
MekonⓇ Yellow	190-195	3-5	Yellow 3-3½	0-0	0-0	Microcrystalline Hard & Brittle
WarcoⓇ Wax 180 White	180-185	4-7	White	0-0	0-0	Microcrystalline Hard & Brittle
WarcoⓇ Wax 180 Brown	180-185	4-7	Brown	0-0	0-0	Microcrystalline Hard & Brittle
WarcoⓇ Wax 150-A Yellow	155-165	25 Max.	2 Max.	0-0	0-0	Microcrystalline Plastic
WarcoⓇ Wax 150-A Brown	155-165	15-20	Brown	0-0	0-0	Microcrystalline Plastic
WarcosineⓇ	150-160	30 Max.	White	0-0	0-0	Microcrystalline Plastic
Paraffin			All Grades			Crystalline
Cane Wax 500	170-176	2 Max.	Tan	26-32	75-95	Vegetable Wax
Cane Wax 511	176-180	2 Max.	Brown	62-68	130-140	Vegetable Wax
Cane Wax 517-711	176-180	2 Max.	Black	11-14	75-85	Vegetable Wax
Cane Wax 700	171-177	2 Max.	Light Brown	26-32	70-90	Vegetable Wax

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Participants in aerosol forum at CMCS meeting, Oct. 31, left to right: John Hinn, Air Reduction Co.; Don B. Ross, Aerosol Packaging of Canada, Ltd., moderator; Joseph J. Gregory, Newman-Green, Inc., and R. F. Byrnes, Rohm & Haas Company of Canada, Ltd., who thanked the speakers.

Hamilton, Ont.; H. A. Keeping, Charles Albert Smith, Ltd., Toronto, and immediate past president, Reginald L. Jones, Colgate Palmolive, Ltd., Toronto, Ont.

At the first "wide interest session," Oct. 31, Alan Jarvis, head of his own design firm, discussed ways of improving design of chemical specialties products packaging. Mr. Jarvis, who is editor of *Canadian Art*, served as chairman of judging committee of the first annual Canadian Aerosol Package contest, sponsored by CMCS. He pointed out that to improve design it was necessary to go back to improve design schools in Canada. Propaganda to improve the design of their products must also be aimed at manufacturers, as well as retailers.

In the course of his discussion, Mr. Jarvis pointed out that Canada had reached the point in her economic development at which it must diversify to expand. Canada, he said, must diversify and export. In order to do this successfully, he stated, Canada must export finished products, such as aluminum, that are designed with "a high degree of sophistication." It is not enough, Mr. Jarvis explained, to simply export aluminum ingots.

Retail buying based on what sold well last year in planning for purchases in the following year "creates built-in conservatism," according to Mr. Jarvis. What is needed, he stated is greater imagination in both design and production of goods.

Mr. Jarvis also spoke on the Canadian National Design Council which concerns itself with industrial design, product engineering, packaging design and display.

Aerosol Forum

The future growth of pressure products will depend to a large extent on new developments in valves, Joseph J. Gregory of Newman-Green, Inc., Addison, Ill., told the first forum on aerosols, Oct. 31. His paper, "Aerosol Valves, Past, Present and Future," appears in full beginning on page 207.

The second speaker of the aerosol forum, John S. Hinn of the customer service laboratory of Air Reduction Sales Co., Madison, Wis., discussed "Nitrous Oxide as a Propellant in Non-Food Aerosols." Mr. Hinn mentioned the use of nitrous oxide as a propellant for certain foam products, aerated streams and residual sprays. He pointed out that a reduction in propellant cost can be realized by the use of nitrous oxide in certain products. Mr. Hinn's paper was essentially the same as one he presented at the CSMA meeting in Chicago last May.

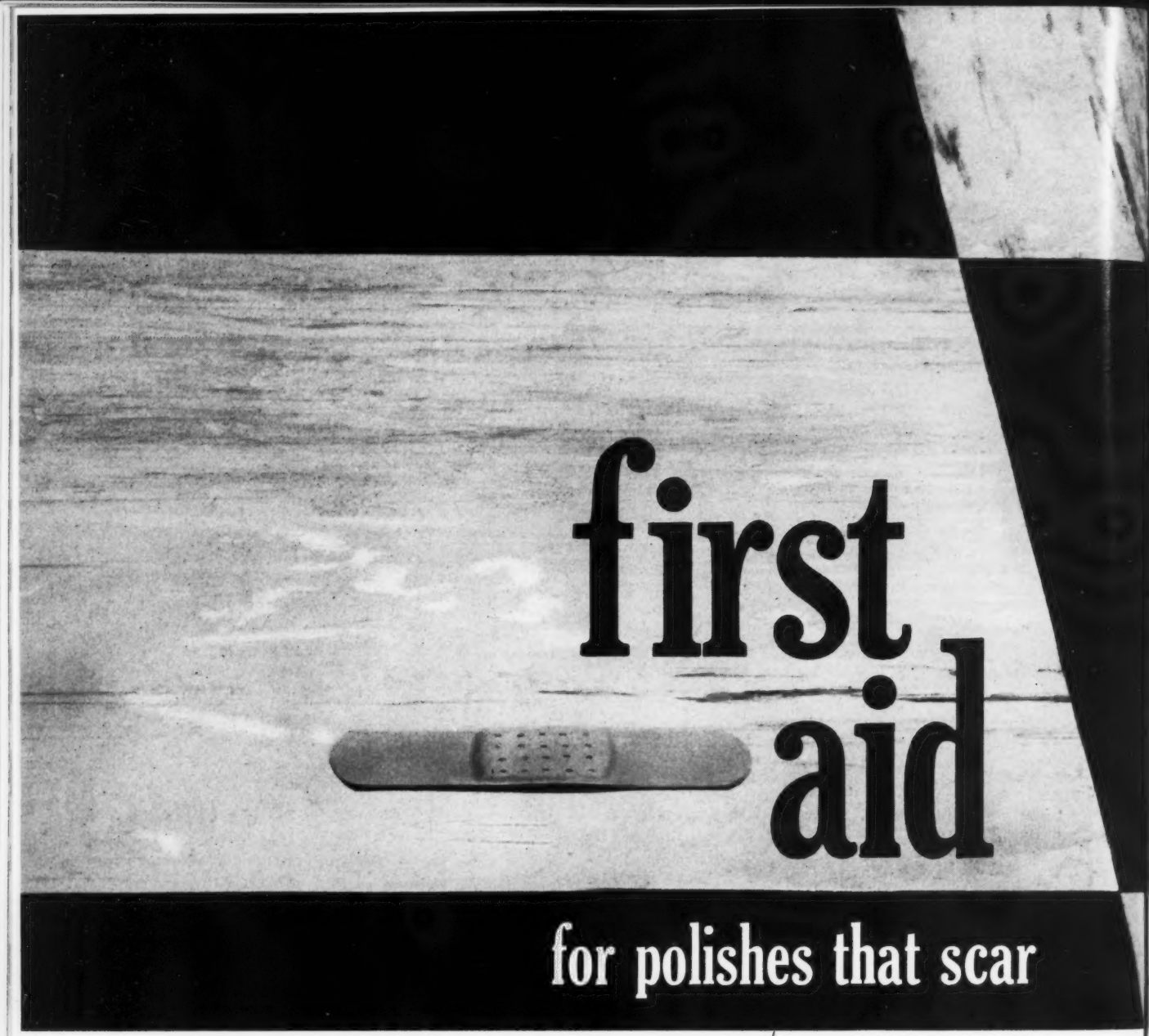
Pesticide Forum

A paper dealing with Butonate and a panel discussion of the control of the Face Fly were the highlights of the forum on pesticides, the afternoon of Oct. 31. Properties and effectiveness of Butonate in insect control were discussed by George J. Hartz of Prentiss Drug and Chemical Co., New York. Butonate, a new phosphate insecticide of low mammalian toxicity, finds use in household and industrial insecticides. It was developed by Drs. J. E. Cassida and B. W. Arthur of the department of entomology of the University of Wisconsin. In addition to its low toxicity, this new pesticide is soluble in most organic solvents; is compatible with pyrethrum, pyrethrum synergists, and other fast acting knockdown agents, is effective against houseflies and roaches in oil solutions, emulsions and powders; is non-staining and has little objectional odor, according to Mr. Hartz.

W. P. Watson, Livestock Commissioner for the Province of Ontario, moderator for the panel discussion of the face fly, declared that "farming would be a more profitable operation if it were not for pests and diseases with which farmers have to deal." According to Mr. Watson, "Chemicals are playing an ever increasing role in the battle for control of insects."

The first panelist, Herbert J. Teskey of the entomology laboratory of the Canada Department of Agriculture, Guelph, Ont., discussed "The Life History and Behavior of the Face Fly, *Musca autumnalis* de Geer." Mr. Teskey pointed out that face flies are active in the field from May to October feeding on various secretions from the face and body of cattle and their excrement. He added that:

"Highest number of flies and greatest irritation to cattle from their attack occurs during July and August. Eggs are laid in fresh cow dung dropped



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in open pastures. A period of larval development in the dung of about five days is followed by pupal developmental period of seven days in the soil surrounding the dropping. Adults emerge from the pupae, feed, develop eggs, mate and then begin the cycle again. The face fly over-winters in hibernation in the adult stage. Various parasites and predators and climatic factors are active in the natural control of face fly populations."

"The History of the Face Fly, *Musca Automnalis*" was reviewed by W. E. Heming of the department of zoology of Ontario Agricultural College, Guelph, Ont. Dr. Heming explained that the face fly is probably a "relatively recent immigrant from Europe." Reasons for this conclusion include the fact that the two old records of the species have been found to be errors in identification; no true face flies have been located in old N. American collections; the feeding habits of the species would prevent their escaping attention, had they been present prior to 1950.

Dr. A. A. Kingscore of the Ontario Veterinary College, discussed "Some Techniques in Testing Insecticides, Repellents and Bacteria against the Face Fly in the Laboratory and in the Field." He revealed that investigations of his group "lean towards biological control of the face fly, and a number of experiments have been conducted with *Bacillus thuringensis*. According to Dr. Kingscore, "This crystal-bearing, spore-forming bacterium has been fed to cattle, and its spores, when given in sufficient quantities, will kill larvae of the face fly in the faeces of cattle. Quantities of spores which have to be fed, and other factors still remain to decide whether or not the use of this or similar organisms will ever be practical and economical."

Dr. Kinscore cautioned that the "greatest progress towards the control of this face fly will be made by studying its habits, many of which are still unknown, and in preceding all field trials by laboratory or *in vitro* studies of any substances which are used on cattle or other animals afflicted by the face fly."

The final panelist, J. A. Dalrymple of the livestock insect

Retiring CMCS president, R. L. Jones, Colgate-Palmolive, Ltd., right, congratulates newly elected CMCS president, A. Robins, of Cartier Chemical Co.

laboratory of the Canada Department of Agriculture, discussed specific techniques and methods used to control the face fly. He mentioned the use of a horizontal back rubber with toxaphene and oil. This method was found to eliminate weeping and to make the cattle more comfortable. The horizontal back rubber is more effective than the diagonal type, according to Mr. Dalrymple. He cautioned that it is important that the rubber be at the right height for the majority of the cattle.

Another aid in controlling face flies is to spray the insides and outsides of barns with malathion. A face fly repellent consisting of pyrethrum and oher chemicals was found effective. His group also used methoxychlor, which was applied in a solution by means of a sponge. The solution was wiped on the eyes and cheeks of cattle daily.

Waxes & Floor Finishes

The development of "Acid-Sensitive Polymers for Floor Finishes" was the first paper of the forum on waxes and floor finishes. This paper, read by Dr. Robert Turner of Morton Chemical Co., Woodstock, Ill., appears in full, beginning on page 143 of this issue.

Richard H. Cahill of UBS Chemical Co., Cambridge, Mass., discussed "Recent Trends in Polymer Based Polishes." Also speaking as this session was C. F. Rand of Warrick Wax Division of Western Petrochemical Corp., New York.

Blends of microcrystalline waxes with high molecular polyethylene, used as floor polish ingredients, offer the advantages of both wax and resin polymer. This is the gist of a paper on "The Role of Microcrystalline Waxes in Floor Polishes," by Charles F. Rand, Jr.

Such blends are readily emulsified in both anionic and nonionic systems. Films cast from polishes incorporating high molecular weight microcrystalline/polyethylene combinations have good performance properties, slip resistance and color stability, according to Mr. Rand.

Aerosol Forum

In reviewing the growth of sales of pressure packaged products, Seth Schneible of Crown Cork and Seal Co., Philadelphia, predicted that the trend to larger size aerosol containers would continue. He stated that "the odds are heavily in favor of the greater part of aerosol market increases in the 6, 8 and 16 ounce sizes." He added that "penetration of glass and plastic in this part of the market is likely to be slight – principally due to cost.

(*Turn to Page* 280)

Wax forum panelists, left to right: R. H. Cahill, UBS Chemical Co.; Robert Turner, Morton Chemical Co., and C. F. Rand, Warwick Wax Div.

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CSMA Meeting

(From Page 108)

presented at the Waxes and Floor Finishes Division meeting the morning of Dec. 4. Leonard Shapiro of Beacon Chemical Industries, Inc., Cambridge, Mass., discussed "Infra-Red Spectra of Emulsion Polymers for Wax, Polish and Coating Industries." The final paper of the session dealt with "Poly-Em Latices in Floor Polishes." This paper was a joint effort by Walter J. Hackett and Bernard Berkeley of Foster D. Snell, Inc., New York, and H. K. Snyder and R. E. Clark of Spencer Chemical Co., Merriam, Kans.

The first group luncheon of the 48th annual CSMA meeting was a double feature affair. Lawrence A. Coleman, general counsel of Allied Chemical Corp., New York, spoke on "Resolving Industry's Problem's with Government." He was followed by the presentation of the winners of the 1961 CSMA Aerosol Package Contest. A. H. Lawrence, Jr., of E. I. du Pont de Nemours & Co., Wilmington, Del., chairman of the CSMA Aerosol Division's Aerosol Marketing and Publicity Committee, presented plaques to the packaging award winners. (Photographs of all winning products on the front cover and on pages 188 and 189 of this issue).

Three divisions meet the afternoon of Dec. 5. A joint meeting of the Aerosol Division and the Disinfectant and Sanitizers Division features a symposium discussion of germicidal aerosols. Phases of germicidal aerosols to be covered include "current and potential markets," formulation (in two papers), "techniques and problems of filling . . . ," and "testing."

A separate concurrent session of the Detergent and Cleaning Compounds Division is also set for the afternoon of Dec. 5. Subjects to be covered include: "Alkali-Soluble Acrylic Emulsions as Stabilizers for Built Non-ionic Liquid Detergents," by David B. Fordyce, Robert E. Wolfrom and Jean Dupre, all of Rohm & Haas Co., Bristol, Pa. Also, "Phosphate Surfactants: Their Uses and Properties," by R. L. Mayhew and Earl Krupin, Antara Chemicals Division, General Aniline & Film Corp., New York, and "Amphoteric Surfactants—New Products and Applications," by Hans S. Manheimer, Miranol Chemical Co., Irvington, N. J.

The general session, Wednesday morning, Dec. 6, will feature a panel presentation on the Federal Hazardous Substances Labeling Act, election of officers and members of the board of governors for 1962, reports of the CSMA secretary, treasurer and counsel. In addition, Richard C. Hottelet, commentator and news analyst, Columbia Broadcasting System, New York, will speak on the world situation.

Charles E. Beach, vice-president of John C. Stalfort & Sons, Inc., Baltimore, will give his presidential address at the second group luncheon, Wednesday, Dec. 6. Mr. Beach will speak on "External Communications." Also scheduled for the Dec. 6 luncheon is a talk, "Marketing Opportunities in the 'Sixties,'" by William W. Bryan, vice-president of Humble Oil and Refining Co., Houston, Tex.

Immediately following the luncheon activities, four divisional meetings will commence. Meeting concurrently beginning at 2:15 p.m. will be the following CSMA divisions: Aerosol, Automotive, Disinfectant and Sanitizers, and Waxes and Floor Finishes. Highlight of the Aerosol Division session will be a discussion of the Federal Hazardous Substances Labeling Act and a report on "New York City Fire Department Regulations on the Use of Flammable Gas as a Propellant." Robert L. Ackerly of Cummings & Sellers, CSMA general counsel, Washington, D. C., will discuss the Hazardous Substances Labeling Law as it applies to aerosols. E. F. Helfer, PowrPak, Inc., Bridgeport, chairman of the Aerosol Division Special Committee on New York City Fire Department Regulations, will give an up-to-date report on the status of the regulations.

Among the highlights of the Automotive Division meeting for Wednesday afternoon, Dec. 6, is a "Report of the Hazardous Substances Labeling Law . . . ," by C. M. White, Olin Mathieson Chemical Corp., New Haven, Conn. In addition to four committee reports there will also be a discussion of "Building a Sales Presentation," by Charles Hooker of Florez, Inc., Detroit.

Dr. E. G. Klarmann, vice-president in charge of technical service for Lehn & Fink Products Corp., New York, a former CSMA president and chairman of the precautionary labeling committee, will discuss hazardous substances labeling at the Disinfectant and Sanitizers Division meeting, the afternoon of Dec. 6. The title of Dr. Klarmann's paper is "The Hazardous Substances Labeling Act — Guidepost to the Disinfectant Industry." "Biological Activity and Application of Organo-Tins" will be reported on at this session in a paper by Robert J. Zedler and Charles B. Beiter of Metal & Thermit Corp., New York.

The Waxes and Floor Finishes Division, also meeting Wednesday afternoon, Dec. 6, will consider the "Hazardous Substances Labeling Act as It Relates to the Wax-Polish Industry." Speaking on this subject will be C. S. Kimball of Foster D. Snell, Inc., New York. Two other papers to be presented at this session will cover "New Concepts in Removability of Polymer Polishes" and "Maintenance Advantages of Detergent-Cleanable, Acid-Removable Floor Polishes." The former paper is by R. J. Turner, C. M. Lutes, K. S. Treviranus and P. L. Weyna of Morton Chemical Co., Woodstock, Ill., the latter paper is by Bertram Sayer, Henry Merken, Augustin La Torre and Harold Naidus, Polyvinyl Chemicals, Inc., Peabody, Mass.

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By B. M. Milwidsky,
Haifa, Israel

Chlorine and peroxide based bleaching compounds are reviewed, mechanisms of their action and performance explained

A ONCE familiar advertisement ran *"Out of the blue comes the whitest wash"*. Times have changed. The speed of modern living and the confined space of contemporary dwellings precludes outdoor bleaching and other time-honored methods. The modern housewife must rely on chemical and physical bleaching aids which reduce the process to a few minutes.

The use of oxidizing compounds, both as additives to washing powders and as bleaching compounds marketed in liquid, powder or tablet form, is growing continuously. Bleaches may be broadly classified into: I. products incorporated into washing powders; and II. bleaching compounds sold as such. Generally, group I can be used in group II; but some members of II cannot be used in I.

Sodium hypochlorite solutions have been sold for many years as "bleaching liquid", "eau de Javelle", or under some proprietary designation. Powdered bleaches and incorporation of bleaches into laundry compounds are comparatively new developments. More recently still, dry bleaches have become ingredients of scouring powders.

Plastic table ware presents a staining problem. Their growing popularity has prompted formulation of special dishwashing compounds incorporating bleaching agents.

Household bleaches include the following types: Chlorine containing bleaches; oxygen releasing compounds; sulfur dioxide compounds; and optical bleaches. The latter should more appropriately be termed "optical brighteners", since they do not bleach by chemical action.

The class of chlorine containing compounds may be further divided into inorganic and organic compounds. Inorganic chlorine bleaches are salts of hypochlorous acid (HOCl); the organic chlorine bleaches are chlorinated nitrogen compounds.

Chlorine Bleaches

The classic of all inorganic bleaches is sodium hypochlorite. Supplied by caustic soda and chlorine producers in strengths of from 10 to 15% available chlorine, it is usually diluted to from 3 to 5% by the bottler.

Unfortunately, the bulk manufacturer of sodium hypochlorite frequently neglects to adequately control residual caustic soda content. This should be at a minimum in material intended for household use. However, it is not uncommon to find up to 3% caustic soda in concentrated hypochlorite solutions. Thus, if a 12% available chlorine product is subsequently diluted to 3% available

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chlorine content, there could still be as much as 0.75% caustic soda in the household laundry bleach. This is dangerously high in our opinion; maximum free caustic soda must not exceed 0.05%.

Due to this problem the formulator of household liquid bleach may find it more convenient and economical to make his own sodium hypochlorite solution. Originally, sodium hypochlorite was made by double decomposition of bleaching powder with soda ash according to the equation:

$$CaOCl_2 + Na_2COC_3 = CaCO_3 + NaOCl + NaCl$$

This method produces a sludge of calcium carbonate. In large scale processing the disposal of the sludge becomes a problem, as the quantities involved do not warrant recovery of precipitated chalk from the sludge. Furthermore, free unreacted lime may be present in the bleaching powder (especially tropical stabilized). This lime may react with the soda ash (of which there must necessarily be an excess) according to the equation:

$$Ca(OH)_2 + Na_2CO_3 = CaCO_3 + 2NaOH$$

Here also the presence of caustic soda presents a problem. Because the reaction must take place at a low temperature and an economical separation of calcium carbonate must be achieved, this method will yield an available chlorine content not much higher than 2%.

Sodium hypochlorite may also be manufactured by electrolysis of salt, a method requiring comparatively elaborate plant. On electrolysis, salt yields chlorine and caustic soda:

$$NaCl = Na^+ + Cl^- \quad (1)$$
$$2Na + 2H_2O = 2NaOH + H_2 \quad (2)$$
$$Cl + Cl = Cl_2 \quad (3)$$

Chlorine is obtained at the anode, hydrogen and caustic soda at the cathode. In the manufacture of caustic soda, elaborate precautions are taken to separate the products at the anode and cathode. In the manufacture of sodium hypochlorite by electrolysis, however, the chlorine and caustic soda are allowed to mix at a low temperature (with the help of refrigeration) and the following reaction takes place:

$$Cl_2 + 2NaOH = NaCl + NaOCl + H_2O \quad (4)$$

For a clear picture of the process, add equations 1 through 4 and simplify to obtain a composite equation:

$$2NaCl + H_2O = NaCl + NaOCl + H_2$$

which shows that hydrogen is lost from the solution and one molecule of water disappears. Also, of every two molecules of salt one molecule is continuously being regenerated.

The continuous increase in salt concentration causes a corresponding drop in electrical conductivity. This method also requires cooling of the solution and yields weak (1 to 2%) hypochlorite solutions with a relatively high sodium chloride concentration.

The easiest and cheapest method of manufacturing sodium hypochlorite is to react caustic soda with chlorine gas according to the equation:

$$2NaOH + Cl_2 = NaCl + NaOCl + H_2O$$

Details of the process are beyond the scope of this review but it should be pointed out that the temperature must be kept low, otherwise chlorates are formed and that, at all times, the solution must be kept alkaline. To achieve a solution containing a minimum or no free caustic soda a small proportion of soda ash can be added to the solution. All the caustic soda will react first and when the soda ash begins to react chlorination can be stopped.

Chlorination of soda ash:

$$Na_2Co_3 + Cl_2 = NaCl + NaOCl + CO_2$$

is not frightfully satisfactory. As soon as all the Na_2CO_3 is used up, the solution turns acid and the available chlorine is lost (by conversion of hypochlorite to chlorate). Furthermore, with continual evolution of carbon dioxide, a certain amount of the chlorine is absorbed into the carbon dioxide gas bubbles (there is zero vapor pressure of chlorine gas in the bubble) and a further loss of chlorine occurs.

A far more satisfactory method of producing sodium hypochlorite from soda ash is to part-chlorinate the soda according to the equation:

$$2Na_2CO_3 + Cl_2 + H_2O = 2NaHCO_3 + NaCl + NaOCl$$

Only half the soda ash is chlorinated. Because of its relative insolubility, a precipitation of sodium bicarbonate will occur. This precipitation serves a useful purpose by carrying with it the impurities originally present in the caustic soda.

This process allows close control of the final pH of the solution. Chlorination should be stopped when there is still a trace of soda ash left. The residual mixture of soda ash and bicarbonate serves as a stabilizing agent for the hypochlorite. The same end result is obtained by chlorinating a caustic soda solution in the presence of a small percentage of soda ash.

Hypochlorite solutions are generally made in concentrations ranging from 7-15% available chlorine and then diluted to the required strengths. When a nice greenish-yellow color is desired a small amount of sodium chromate may be added. Organic dyes, of course, cannot be used to color hypochlorites. For a blue color a finely dispersed mixture of ultramarine blue and water is added. Although this additive settles in time, the blue reappears on shaking.

'Available chlorine' is determined by (among other methods) titrating with thiosulphate, the amount of iodine liberated by the

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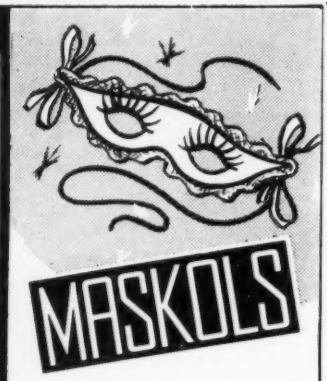

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hypochlorite from an acidified potassium iodide solution:

$$HOCl + KI = KCl + KOH + I_2$$

Thus, one molecule of hypochlorous acid liberates two equivalents of iodine, i. e. two equivalents of available chlorine. Returning to the equation for the manufacture of hypochlorite:

$$NaOH + Cl_2 = NaCl + NaOCl$$

it is to be noted that 71 pounds of chlorine produce 74.5 pounds sodium hypochlorite. Due to the fact that one molecule of sodium hypochlorite gives two equivalents of 'available chlorine', the 71 pounds of chlorine introduced yield 71 pounds of 'available chlorine'. The percentage of available chlorine is also very roughly equal to the percentage of sodium hypochlorite in solution. In considering the economics of manufacture, one pound of chlorine gas gives one pound of 'available chlorine'.

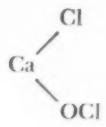
Sodium hypochlorite is sold only as a liquid. For household use it is marketed in strengths varying from 0.5% to 5.0% available chlorine. The liquid is not very stable both as regards shelf-life and exposure to light. To increase its stability to light it is invariably packed in dark bottles.

Potassium hypochlorite is equivalent in all respects to sodium hypochlorite but is higher in price.

There are two commercially interesting calcium salts of hypochlorous acid: Calcium Hypochlorite – $Ca(OCl)_2$ – which is made by passing chlorine through milk of lime and evaporating the resulting solution under reduced pressure. The solid thus obtained is calcium hypochlorite.

Each molecule of calcium hypochlorite liberates two molecules of hypochlorous acid and each molecule of hypochlorous acid in turn gives two equivalents of 'available chlorine'. Thus, calcium hypochlorite yields four equivalents of 'available chlorine'. The molecular weight of calcium hypochlorite is 143, whereas the weight of four atoms of chlorine is 142, therefore, calcium hypochlorite can theoretically give 100% available chlorine. In actual practice it is possible to obtain 85% calcium hypochlorite.

The other calcium salt of hypochlorous acid is bleaching powder, sometimes called chloride of lime. This is made by passing chlorine gas over dry slaked lime whereby a product approximating the formula $CaOCl_2$ – is obtained. The structure of bleaching powder is not completely established and is sometimes written as:



According to Mellor (1) it is a mixture of a basic chloride $CaCl_2 \cdot Ca(OH)_2 H_2O$ and a basic hypochlorite $Ca(OCl)_2 \cdot Ca(OH)_2$, in approximately molecular proportions. Under optimum conditions, bleaching powder can be obtained with 43.5% available chlorine, but in practice 35% available chlorine is more usual.

These two calcium salts of hypochlorous acid have no direct bearing on laundry bleaching – except as intermediates in the manufacture of sodium hypochlorite as mentioned above – because both add calcium ions to the water which reduce the efficiency of the detergent, be it soap or synthetic.

Scouring Powder Bleaches

However, since it has become common practice to formulate scouring compounds incorporating bleaching and sanitizing agents, these calcium salts have a definite place in such products. Scouring powders usually contain a small percentage of soda ash. In contact with water, sodium hypochlorite is formed in situ by interaction of calcium hypochlorite and soda ash. The calcium carbonate formed in the reaction is not harmful in any

way but actually adds to the abrasive action. Both bleaching powder and calcium hypochlorite have a tendency towards hygroscopicity or deliquescence, possibly due to the presence of calcium chloride. This tendency can cause trouble in a compounded detergent. But by careful processing and use of dry ingredients caking can be minimized, especially in a scouring powder which normally comes in a sealed can and is used up quickly, once the container has been opened. A small addition of anhydrous trisodium phosphate helps to lengthen the shelf life of a scouring powder.

A chlorinated detergent scouring powder might comprise:

Detergent powder, 40% active	5
Bleaching powder*	1
Soda ash	5
Trisodium phosphate anhydrous	3
Tetrasodium pyrophosphate	5
Abrasive powder	81.5
*May be replaced by calcium hypochlorite	0.5

"Chlorinated trisodium phosphate" is another inorganic chlorine releasing compound. Actually it is a cocrystallization product of trisodium phosphate, sodium hypochlorite, and water of crystallization, approximating:

$$4(Na_3PO_4 11H_2O)\ NaOCl$$

Available commercially with an "available chlorine content" of from 3.2 to 3.7%, this material lends itself as an additive for scouring powders. Since trisodium phosphate is a valuable alkaline clean-

(*Turn to Page* 165)

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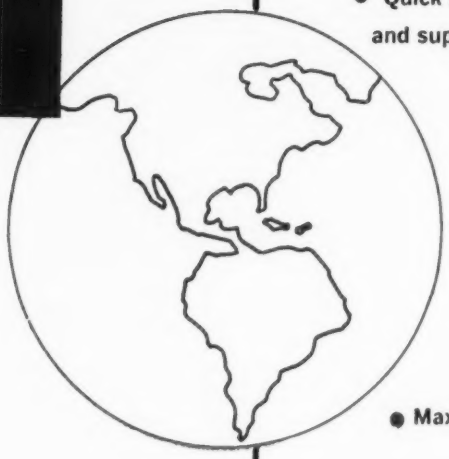

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Development of "acid-sensitive"

Polymers for Floor Polishes

By Robert J. Turner,*
Morton Chemical Company—Woodstock, Ill.

THE use of synthetic polymers in the production of dry-bright floor polishes for the household and the industrial market has become quite common in the last five to eight years. Sales of polymer based polishes have continued to climb, and each year they have accounted for an increased percentage of the total sales of floor finishes. For example, in Table I, figures taken from Annual Product Surveys by the Chemical Specialties Maufacturers Association of polish manufacturers in the United States indicate that polymer based polishes have been increasing at an average annual rate of 35 to 50 per cent. During the same period, wax emulsions have been holding their own or even decreasing slightly.

The synthetic polymers which have been most commonly used to date in floor polishes are based upon polystyrene, polyacrylates, and copolymers and terpolymers of styrene and acrylates (or methylacrylates). In the early period of their development, polymers based upon polystyrene were the most popular and they are still an important component in dry-bright floor polish formulations. During the last few years, polyacrylates (or polymethacrylates) have come into common usage chiefly because of increased emphasis on light colored floors. The polyacrylates currently account for an estimated one-third of the polymer consumption in floor polishes. Acrylate copolymers and terpolymers containing varying percentages of styrene have been introduced recently, chiefly to reduce the cost of the pure acrylates.

Some of the factors responsible for the success of synthetic polymers are lower cost formulations, reliable sources of supply, improved durability, ease and versatility of formulation, ease of application, improved appearance of the polished floors, and retention of appearance with wear.

It is certainly true that polymers as raw materials have provided a stable low cost base for the floor finishing industry which is completely independent of natural sources of supply. Up to the advent of polymers U. S. polish manufacturers were subjected to raw material prices which fluctuated widely depending upon supply and demand. In some instances, shortages of raw materials developed just when they were most needed.

Polymer Research

The continuing research effort to improve emulsion polymers used in the polish industry has also contributed to an increase in sales. Major emphasis on new polymers for polishes in the research laboratories of a number of polymer and polish suppliers has resulted in developments which have provided a steady series of improvements in the properties of polymer polish formulations. The industry is even optimistic that polymers will be the solution to all of the problems found in floor polishes. For example, in a paper given two years ago this next December at the 46th annual meeting of the Chemical Specialties Manufacturers Association in Washington, D. C., Dr. Vernon Steinle of S. C. Johnson spoke on "Floor Finishes of Tomorrow" (1) in which he said, "In the not too distant future I see the synthesis of a single molecular structure in the form of an emulsion polymer that will produce a higher gloss than the present floor waxes, which can be rebuffed to its initial gloss, which is absolutely impervious to spotting by water or by soap and water, but which will be easily removed by the addition of a single common chemical to the scrub water." In this paper, the results of an intensified research effort carried on in the research laboratories of the Morton Chemical Company are described. This work has led to a new concept in polymeric floor finishes, which rivals if not surpasses, Dr. Steinle's "Floor Finishes of Tomorrow."

Alkali-Sensitive Polishes

Polymer latices are ordinarily combined with alkali-soluble leveling agents and wax emulsions to give polish formulations which

Table I. Chemical Specialties Manufacturers Association Annual Product Survey

	Per Cent Change by Years			
	56 - 57	58 - 58	58 - 59	59 - 60
Wax Emulsions				
Less than 16% non-volatile	+2.85	+2.26	—2.85	
16% and greater non-volatile	+3.67	—1.71	+19.22	
Polymer and Resin Polishes				
Aqueous based	+51.78	+49.31	+36.83	

*Presented at the 4th annual meeting and conference of the Canadian Manufacturers of Chemical Specialties Association, Toronto, Ontario, October 31, 1961.

dry to a smooth and glossy film. After extended traffic and aging it is generally desirable to remove this film prior to the application of a new coat of polish to the floor surface. Inasmuch as the synthetic polymers constitute the most permanent wear resistant portion as well as the bulk of the polish formulation, it has been necessary to select those polymers which are capable of being removed by household cleaning aids such as soaps, detergents, and other commercial cleaning formulations. Since these cleaning aids are usually of an alkaline nature, it has been preferable to have the polymer polish film susceptible to removal and attack by alkaline materials. The use of such alkali-sensitive or alkali-soluble polymer based polishes has, however, led to certain disadvantages. When detergents and other alkaline cleaning aids commonly utilized in kitchens, bathrooms or institutions are accidentally spilled on a polished floor, they attack the polish film and remove it prematurely. This leaves unsightly spots and permits wear and the accumulation of dirt on the unprotected surface.

Neutral Polishes

An alternative to alkali-sensitive polymers in floor polish formulations is the use of neutral or inert polymeric materials. However, this has not proven to be a practical expedient since the best method of removing polymer polishes of this type is with strippers containing organic solvents, and many of the surfaces upon which polishes are applied, such as asphalt, linoleum and plastic tile are subject to attack by organic solvents. Therefore, it would seem desirable to provide a polymer for use in aqueous based floor polishes which would be resistant to removal by alkaline reagents, but readily removable by some other conventional material, preferably something commonly available in a household. This was the premise upon which the research on this project was initiated.

Polish Removal Reagents

Chemicals innocuous enough to be commonly found in the household are few in number and when a restriction is placed on the use of one of them as a floor polish stripper, there remains only a narrow spectrum of possibilities. These vary from weak bases like baking soda, household bleach, and household ammonia, to neutral compounds such as salt, sugar and starch, to weak acids which can be represented by vinegar and tartaric acid. Other possible reagents are caustic and strong mineral acid formulations which are undoubtedly available on the top shelf of the housewife's broom closet for cleaning drains and commodes. Finally, solvents ranging from rubbing alcohol to paint thinners and gasoline may be found.

Even to a chemist with the wildest imagination, it was fairly obvious that a polish film could not be made easily susceptible to attack by neutral materials such as sugar, starch or salt. Since it was desired not to use strong solvents and to eliminate alkaline susceptibility, only dilute acids comparable to vinegar, citric acid and tartaric acid remained as possibilities.

Heretofore, housewives have been known to scrub their floors with vinegar to increase the alkali resistance of conventional polishes. Vinegar is widely accepted as a harmless material. It is edible and housewives even use it to rinse their hair. With these precedents in mind, vinegar was chosen as a potentially safe and chemically active ingredient that might have possible use for removing a polish film from the floor. Since polymers which would be susceptible to attack by weak household acids were not yet known, it was necessary to design them "from scratch" and then formulate them into a workable polish formulation.

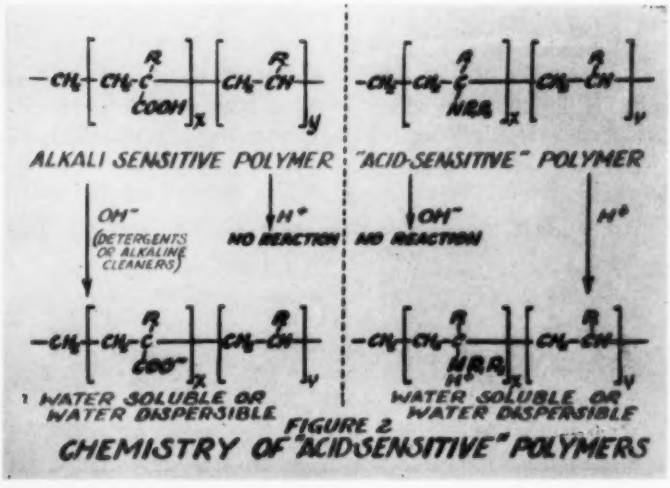
Conventional floor polish polymers are made susceptible to alkalies by the incorporation of small amounts of acidic compounds such as acrylic, methacrylic or itaconic acid into the polymer. Therefore, it seemed reasonable and logical to use a reverse technique by including monomers in the polymer which would react with acids instead of alkalies to form water soluble salts. Examples of such monomers available commercially are vinyl pyridines, allyl amines, vinylbenzylamines, amino substituted acrylates, amino substituted methacrylates, etc. Using these monomers or comparable raw materials "acid-sensitive" polymers were synthesized.

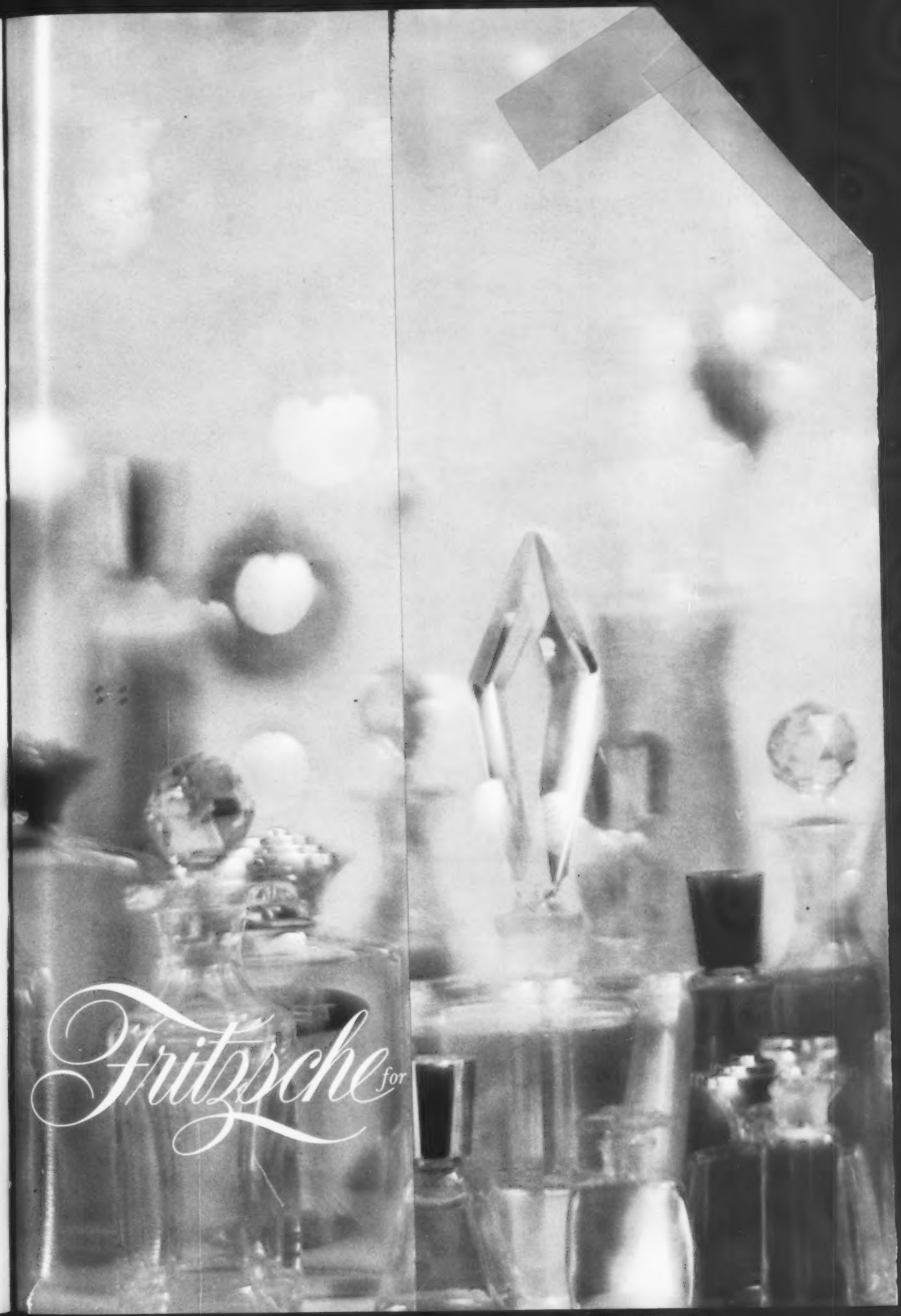
"Acid-Sensitive"

The term "acid-sensitive" is defined in this paper to mean that the polymer or the surface coating

(*Turn to Page* 151)

Figure 1. Chemistry of "Acid-Sensitive" Polymers.

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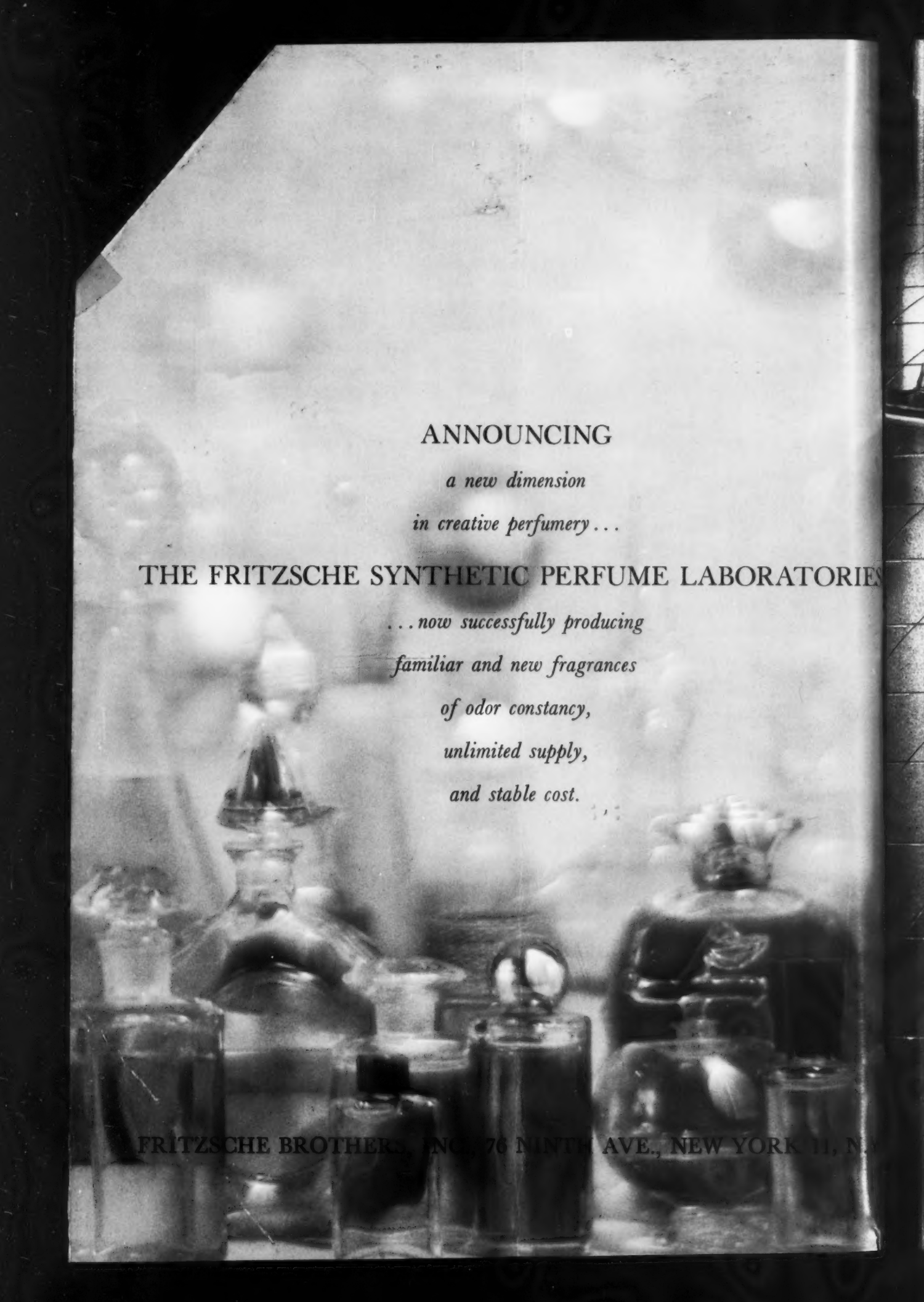
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(*From Page* 144)

prepared therefrom is softened, solubilized or at least partially solubilized or dispersed by the action of dilute acids applied to a surface film which thereby enables one to remove the film from the surface.

Chemical differences between the new "acid-sensitive" polymers and conventional alkali-sensitive polymers are outlined in Figure 1.

When an alkaline stripper or detergent reacts with the alkali-sensitive polymer in a conventional polish film the polymer is either dispersed or solubilized, resulting in removal or partial removal of the film. In contrast, when an alkali or alkaline cleaning agent is applied to the "acid-sensitive", alkali-resistant polymer no chemical reaction takes place. However, when an acid is applied to the same film it will react to form a salt which is either soluble or dispersible in water solutions. Thus, the basis is provided for soap-proof polishes, which are in turn readily removable by a specific acidic stripping formulation.

After the original conception of the "acid-sensitive" polymer latex had been evolved and had been reduced to practice, further restrictions were added to floor polish formulations prepared from this product.

Initial Appearance

Leveling and initial gloss of the "acid-sensitive" polishes were required to be comparable to or better than those of conventional polishes. By a careful choice of monomers, a polymer was developed which gave excellent gloss on the first coat. Theoretically at least, the alkali-resistant polish formulation should be very resistant to itself and no problems were expected to be encountered in recoating. This was found to be true. A second coat could be applied literally as soon as the first coat was dry to the eye. No whitening or re-emulsification of the initial coat was observed. This resulted in a reward of true "double" gloss. Three coats resulted in "triple" gloss and soon our formulation chemists found that they could actually shave using the "mirror" finish of a vinyl tile covered with several coats of this new polish.

Soap Resistance

In general, formulators have had to be satisfied with overnight water resistance when working with conventional alkali-sensitive polymer polishes. Some insisted upon, and were pleased when they could obtain, adequate water resistance after two hours. Early work on the alkali-resistant formulations indicated that not only water resistance but soap resistance developed after aging overnight. However, in order to solve the problems which can occur in immediate soap spillage after polishing floors in kitchens and bathrooms, further restrictions were placed on the polymer and its formulation in order to obtain soap and water resistance immediately after the polish was dry to the eye. These restrictions not only placed rigid limitations upon the ingredients used in the manufacture of the polymer, but also restricted the amount and character of the other ingredients used in the polish formulation

For example, in the polish formulation given in Table 2 it was necessary to limit the amount of alkali-soluble leveling resin if maximum soap resistance was to be retained. The leveling resin also had to be carefully chosen to obtain this property. However, it was found that since the polymer is so inert to alkali, most conventional alkali-soluble leveling resins could be used in low percentages in conjunction with the polymer without detracting from the overall soap resistance of the polish film. Conventional anionic or nonionic wax emulsions and conventional plasticizers were used in the formulations. More buffable formulations could be prepared by increasing the wax emulsion content without detracting from the soap resistance.

Table 2. "Acid-Sensitive" Polish Formulations

	Dry Basis	
	Dry-Bright parts	Buffable parts
"Acid-sensitive" latex	80	35
Alkali-soluble leveling resin	10	10
Wax emulsion	10	55
Plasticizers	10-15	10-15

Removability

In keeping with the original purpose to develop a polish which would be readily removable with weak household acids, the early polymers in this work were so designed that a dilute mixture of vinegar or vinegar combined with some "rubbing" alcohol would readily remove aged polish films. However, the high concentration of active ingredients in these strippers (about 20%) precluded their use because of price considerations, odor, low dilution factor, and attack on tile.

An intensive screening program was then undertaken in which literally hundreds of chemicals and combinations of chemicals were tested for possible use in acidic stripper formulations. It was found that the best balance of stripping effectiveness, volatility, lack of attack on tile substrate, water solubility, high dilution factor, ease of application and cost was achieved by a combination of an acid along with a solvent and a nonionic surfactant. Strippers with a total active ingredient concentration of one to three per cent (or a dilution factor of between 1:35 to 1:100) were thereby formulated at a cost of less than five cents per gallon; a cost unattainable with workable concentrations of almost any household chemical.

A typical general stripper formulation is as follows:

	parts
Acetic acid, tartaric acid, etc.	2
Nonylphenolpolyethyleneoxide	1
Ethylene glycol monoalkyl ether	2
Dilution Ratio	1 to 40

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sensitive" polishes are compared with widely sold polyacrylate and polystyrene based polishes in Table 3.

Table 3. Comparative Evaluation of Polish Formulations

	Acrylic polish A	Styrene polish B	"Acid-Sensitive" polish
Gloss (one coat)	VG	G	VG
Gloss (two coats)	VG	VG	EX
Leveling	VG	VG	VG
Water resistance	VG	G	EX
Recoatability	G	G	EX
Soap resistance	F	F	EX
Slip resistance	VG	VG	VG
Resistance to dirt pickup	VG	EX	VG
Scuff resistance	G	VG	VG
Resistance to black heel marking	VG	G	VG
Film color	EX	G	EX
Removability	VG	P-F	EX
Non-Yellowing	EX	G	EX
Shelf stability	EX	EX	EX
Freeze-Thaw stability	3 Cycles	4 Cycles	3 Cycles

Marketing New Polishes

An attempt has been made to anticipate marketing problems that might arise in selling floor polishes based upon "acid-sensitive" alkali-resistant polymer latices. A concept of two packages, one for the polish and one for the stripper, should be more readily accepted by commercial and industrial users than by a housewife. Most commercial and industrial consumers are undoubtedly now using special strippers to remove current polishes which are based upon conventional polymers or waxes. Therefore, no real problems are anticipated in selling them on a separate stripper for use with the "acid-sensitive" floor finishes. It is felt that the acceptance and the marketing of a two-package system to the housewife can be done but it will require more extensive advertising and education.

Problems of attack of the acid-based stripper on all types of floor tiles have been carefully studied in our laboratories, and no serious problems have been found if the stripper is correctly used at the proper dilution. However, if the stripper is sold in concentrated form, the industrial consumer or the housewife must be taught not to spill the concentrate on the floor before or during the dilution of it. The dilute stripper is actually quite mild and its pH is very similar to commonly known items such as "Coca-Cola," lemon juice, or vinegar. The acidities of three typical acidic stripping formulations are compared below with common acidic foodstuffs.

	pH
Coffee	5.2
Tomato juice	4.3
"V-8" vegetable juice	4.2
Ketchup	3.8
Orange juice	3.6
"Realemon" (diluted 1:25)	2.6
Vinegar	2.5
"Coca-Cola"	2.5
Acetic acid stripper	2.7
Tartaric acid stripper	2.0
Phosphoric acid stripper	1.8

Containers for the polish represent no problem since the polish is an ordinary alkaline system with which the industry is familiar. Containers for the stripper will probably be confined to either glass, polyethylene lined or phenolic lined metal containers.

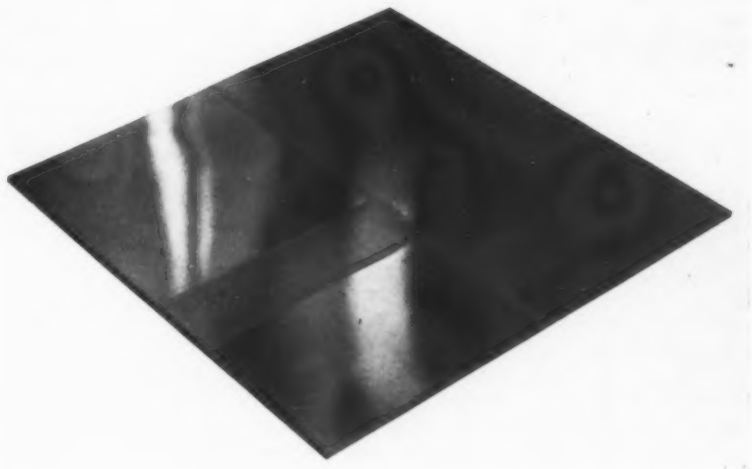
Sales Advantages

It has already been found that the sales advantages of the "acid-sensitive" alkali-resistant floor polishes are readily demonstrable. These polishes, properly designed, can be quickly demonstrated to have advantages over alkaline based finishes even while a salesman is making a routine call on a consumer. Figure 2 illustrates how a demonstration of this kind can be done. The "acid-sensitive" polish has been applied on a tile along with a standard commercial polish. The polishes have been scrubbed across the bottom with detergent solution a few minutes after they have dried to the eye. Note that the standard

(*Turn to Page* 272)

Figure 2

Left hand side of vinyl floor tile in photo was coated with new "Acid-Sensitive" polish; right side was coated with "standard polish." Dilute acid stripper was used on dull area on left and continued across adjacent area covered with standard polish. Dull area on right side of tile and adjacent area on left were treated with standard detergent and water.



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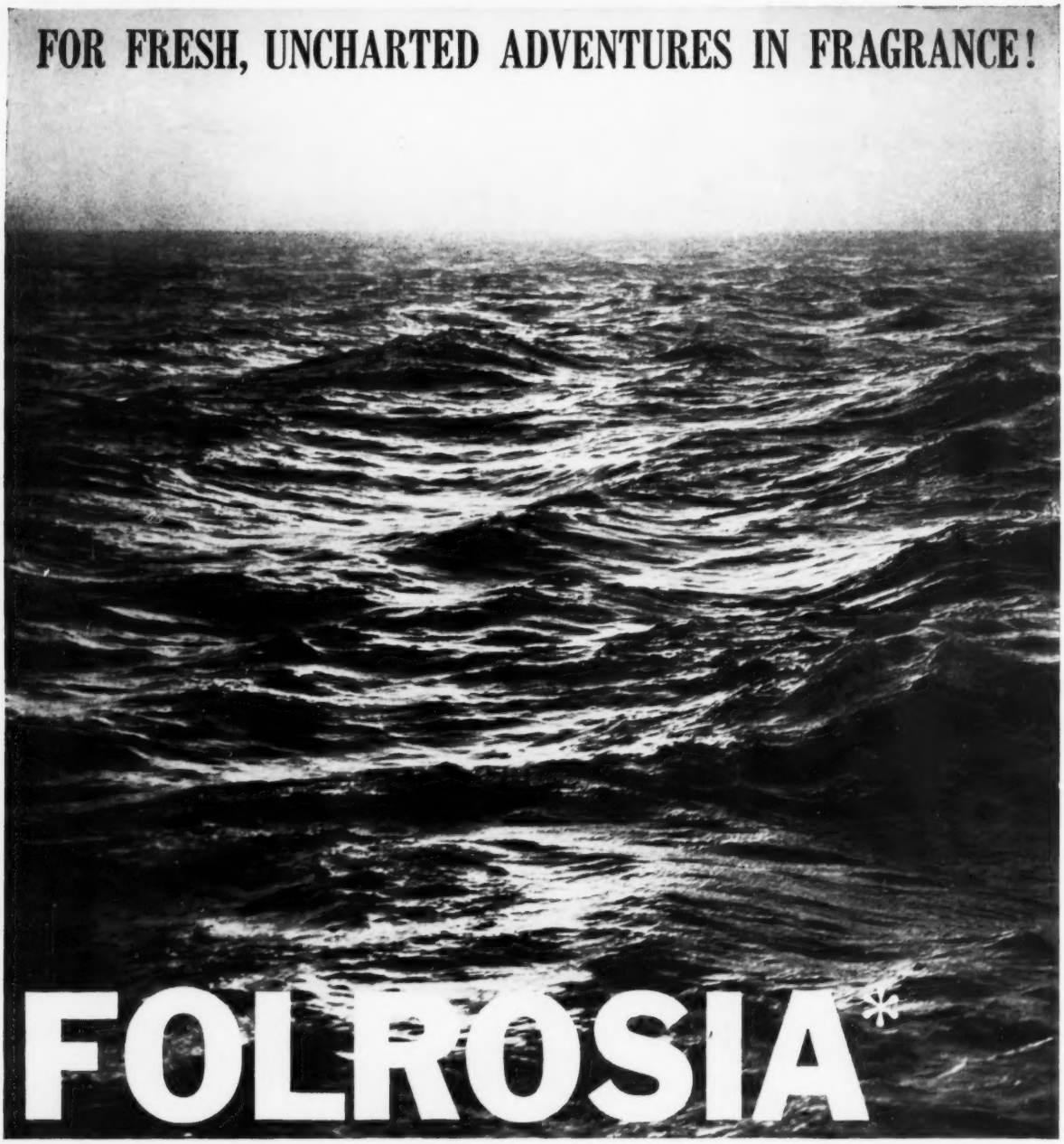

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FOLROSIA blossoms with new levels of floral realism! Whether you wish to enhance familiar rose materials, create bold new rose accents of uncommon floralcy and naturalness, or add fresh, lifelike notes to more subtle compositions, FOLROSIA provides a simple, yet unusual answer.

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Pressure Packaging Publicity

Aerosol Market Development and Publicity Committee of CSMA's Aerosol Division keeps pressure packaging in news forefront

FROM small town newspapers to top national consumer magazines, from specialized trade publications to leading business news periodicals, a steady flow of publicity extolling the merits and advantages of aerosols repeatedly informs and reminds consumers to buy the built-in convenience of push-button packaging.

This publicity does not just happen. It is planned, created and placed as part of the CSMA Aerosol Division's continuing, hard-hitting market development and publicity program, now in its fifth year.

During that time literally hundreds of feature stories, featurettes, news fillers, syndicated editorials, photo-captions and news releases have been beamed to all segments of the nation's press and have captured editorial space which, by any standard, represents impressive coverage and high readership.

This record of accomplishment and this publicity momentum have been built up through the joint efforts of a Steering Committee, comprising industry representatives from among CSMA member companies who are supporting the program, and the industry's public relations agency, Normal Odell Associates, Inc.

Meetings of the Aerosol Market Development and Publicity Committee and the agency staff are held every six weeks or so in New York City. At these meetings the Committee receives a full report of published results, materials in preparation, activities initiated, and considers projects for future action.

All publicity and communications aimed at the press in the name of the CSMA Aerosol Division are in the interests of "aerosols" generically. Mentions or identification of private aerosol brands or labels are avoided, leaving such proprietary brand promotion to the individual product marketers.

Companies Subscribing to 1961 Market Development & Publicity Program Aerosol Division, Chemical Specialties Manufacturers Association

Allied Chemical Corp.
General Chemical Division
American Can Co.
Aromatic Products Inc.
John H. Breck, Inc.
Clayton Corp.
Colorite Plastics of New Jersey
Continental Can Co.
Crown Cork & Seal Co.
Diamond Alkali Co.
Dodge & Olcott, Inc.
Dow Chemical Co.
P. R. Dreyer Inc.
E. I. du Pont de Nemours & Co.
Enjay Chemical Co.
Florasynth Labs., Inc.
Fritzsche Brothers, Inc.
General Aniline & Film Corp.
Givaudan-Delawanna, Inc.
Kartridge-Pak Co.
Krylon, Inc.
E. J. McKernan Co.
Peerless Tube Co.
Pennsalt Chemicals Corp.
Perry Bros., Inc.
Phillips Petroleum Co.
Precision Valve Corp.
Risdon Manufacturing Co.
Sargent-Gerke Co.
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Seaquist Manufacturing Corp.
Sprayon Products, Inc.
Sterling Seal Co.
Sunnen Co.
Union Carbide Chemicals Co.
van Ameringen-Haebler, Inc.
Div. of International Flavors and Fragrances, Inc.
Watkins Products, Inc.
Wheaton Plasti-Cote Corp.

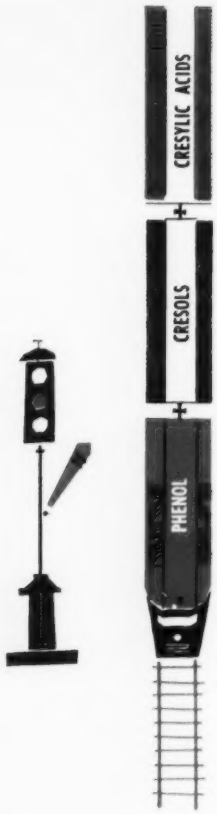
Objectives

Since its inception, the Aerosol Division's market development and publicity program has hewed to these objectives:

- . . . To publicize to consumers and the trade the convenience and economy of aerosols, and their place in modern household management.
- . . . To establish a central source for information on matters of publicity and industry promotion.
- . . . To provide information at the consumer and dealer level regarding the many different types of aerosol products available.
- . . . To promote both year round and seasonal aerosol product types in all potential markets.
- . . . To carry out an effective public relations program that will present aerosols to the public in the best light.

An important underlying motivation of the Aerosol Division publicity program since its beginning has been to help sustain consumer interest in and demand for pressure packaged products, in general, as opposed to conventionally packaged items — a promotional need that is not necessarily filled by the private label marketers in their print, radio and television advertising.

As a result, it has been pos-



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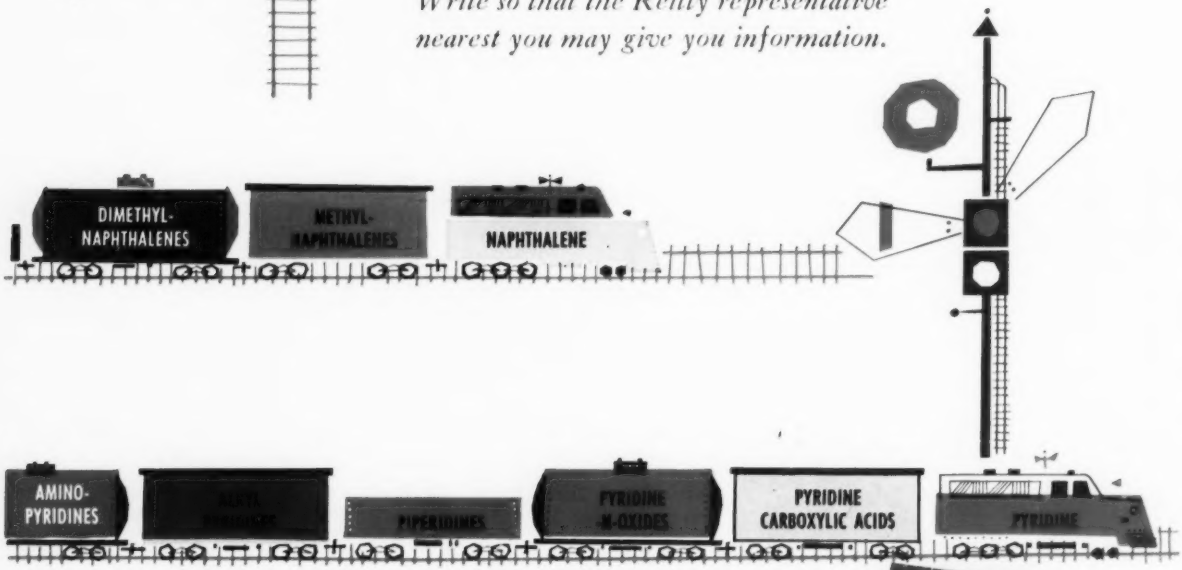

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sible to place a number of excellent stories in publications that will devote editorial space to a feature article on pressure packages generically – if it is timely, newsworthy and well prepared – when they would not be likely to publish features and news on one particular aerosol brand or product line in similar fashion.

The story ideas, background material, feature outlines, photo illustrations and other material must be fresh and of real reader interest if they are to get into print. Since publicity for aerosol packaging thrives on "what's new," the Committee constantly strives to keep up with, or even a bit ahead of, the latest developments in pressure packaging. In this way effort can be concentrated where it will produce maximum sales-building appeal for the benefit of all pressure packages.

Sponsors

CSMA member companies are kept informed of important publicity events by means of bulletins and reprints distributed by CSMA. Also, the Committee has reported on program results and plans with slide presentations at most of the CSMA conventions over the past four years.

In July, 1961, the method of financing the CSMA Aerosol Division's Market Development and Publicity program was modified. Response to the fund solicitation was excellent and a somewhat larger budget was made available in support of the program. As a result, more manpower has been assigned and the publicity effort has been intensified.

CSMA Aerosol Publicity Committee Members

A. H. Lawrence, Jr., E. I. du Pont de Nemours & Co., chairman
James W. Bampton, Krylon, Inc.
Charles E. Beach, John C. Stalfort & Sons, Inc.
Walter C. Beard, Risdon Manufacturing Co.
Donald A. Davis, Aerosol Age
A. T. DeVera, Fluid Chemical Co.
Roy Ferry, A. Schrader's Son
Gordon C. Gilroy, Precision Valve Corp.
S. T. Guidice, American Can Co.
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A. R. Marks, Wheaton Plasti-Cote Corp.
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Frank S. Patton, Jr., Sterling Seal Co.
C. Brooks Ricca, Pennsalt Chemicals Corp.
Thomas Spackman, II, E. I. du Pont de Nemours & Co.
Martin Tausz, Helene Curtis Industries, Inc.
J. J. Tomlinson, General Chemical Division, Allied Chemical Corp.

Variety and Scope

Individual projects carried out by the Committee over the past few years are too numerous to be covered in a short article. However, the following brief listing of results and projects during the past 12 months gives an indication of the variety, scope and impact of the program:

Wall Street Journal—A front page feature on pressure packaged foods in the March 28 issue was based on information provided by the agency and by suppliers of materials and components for aerosols.

Aerosol Production – An interim report on estimated production of pressure packages in 1960 was prepared and sent to newspapers, business and trade publications in January. It appeared in the *New York Times, New York Journal of Commerce, Chicago News, Sales Management* magazine, *Supermarket News, Printer's Ink*, and other media.

Chicago Sun-Times Syndicate—Pressure packaged permanent wave was the subject of a column under Mary Sue Miller's by-line, syndicated to more than 150 U. S. newspapers and published in many of them.

Trade Publications – Joint effort by the CSMA Aerosol Publicity Committee-agency team, and CSMA's own publicity committee, resulted in a number of periodicals publishing the story on the winners in the 1960 Aerosol Package Awards competition. *Soap and Chemical Specialties* published on the front cover of its December issue a photograph of the "best of

(*Turn to Page* 165)

Typical of illustrations for newspaper mats are photos below on behalf of pressure packaged flea killer, spray starch and shoe polish. Mats with catchy headline, photo and short caption are widely used by smaller newspapers.

Improve gloss and antislip properties of floor polishes . . . with A-C Polyethylene

Higher gloss . . . antislip . . . longer wear-life—these are among the many advantages that A-C® Polyethylene brings to industrial floor polishes.

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BASIC TO AMERICA'S PROGRESS

New Look at ROTENONE

Rotenone combines a broad spectrum of insecticidal activity with low degree of toxicity to humans, pets, and plants

By Robert D. Sharp,
Prentiss Drug & Chemical Co.
New York

TWO groups of leguminous plants are well-known commercial sources of rotenone. First, there are species of the genus *Derris* known in the trade as derris of which *Derris elliptica* is the important source of rotenone. Derris is cultivated commercially in Malaya, the Philippines and Indonesia.

The second group of plants, commonly called cube (pronounced koobay), belongs to the genus *Lonchocarpus* and the most important species is *Lonchocarpus nicou*. Cube is grown in large quantities in Peru to supply the major portion of the United States market.

In spite of the fact that in 1942 Jones reported that rotenone or closely related compounds had definitely been reported in as many as 67 plant species of the legume family, commercial production has narrowed down to derris for the eastern hemisphere and cube for the western. The roots of the plants are articles of commerce.

Early History

Observations on rotenone bearing plants go back as far as two or three hundred years. John Nieuhoff spent nine years in Brazil, from 1640 to 1649. He told how the Brazilians used leaves, bark, fruit or roots of certain plants to bait the water so that the intoxicated fish came to the surface.

Another early observation was recorded by Rumph in 1747. Several plants were used in the East Indies for stupefying fish. One species, probably *Derris elliptica*, was used only for fishing purposes. These plant fish-poisons were extremely toxic to fish but apparently harmless to human beings because the poisoned fish were used for food.

In 1758, Juan de Ulloa described a method of fishing used by the Indians on the Guayaquil River which involved chewing a certain herb called Barbasco. The chewed barbasco was mixed with some bait and scattered on the water. The juice of the plant was so strong that the fish floated to the surface. The Indians were apparently unharmed by chewing barbasco which was still toxic to fish even though the juice was diluted several hundred times in the river or lake.

In spite of this ancient background, it was not until 1911 that a British patent was granted covering derris as an insecticide. Only after 1920, important commercial quantities of derris came into use as an insecticide in the United States. Subsequently, much experimental work was done and when Dr. R. C. Roark, chief of the Insecticide Division of the U. S. Department of Agriculture, prepared "A Digest of the Literature of Derris (Deguelia) Species used as Insecticides, 1747-1931," a total of 456 references was listed.

Chemistry

Rotenone is the principal toxic compound in both derris and cube. Pure crystalline rotenone has a melting point of 163° Centigrade. It is a complex organic compound and a period of 37 years elapsed between the description of the first crystalline rotenone (originally named nicouline) and the completed determination of its chemical structure. Particularly outstanding was the work of Haller and LaForge of the U. S. Department of Agriculture.

Rotenone isolated from cube is identical with that obtained from derris. Therefore, the insecticidal potency of either cube or derris is largely dependent upon the rotenone content.

Other insecticidal compounds have been isolated from derris and cube. These compounds have chemical structures closely related to rotenone and are the cube or derris extract (other than rotenone) indicated on the label of rotenone insecticides. The names of these extractives and some of their approximate toxicities compared to rotenone are listed in Table 1.

Table 1.

	Relative toxicity to silk worm larvae as stomach poisons	Approx. relative toxicity to insects as contact poisons	Comparative toxicity to goldfish
Rotenone	100	100	100
Deguelin	20-30	50	39
Toxicarol	0.2	7	55
Tephrosin	5-10	2	15
Sumatrol	—	7	—
Elliptone	—	20	—
Malaccol	—	—	—

Solubility

The solubility of rotenone in several well-known solvents is outlined below:

Insoluble

Water (0.1 to 0.2 parts per million)

Slightly Soluble

Aliphatic petroleum hydrocarbons (Deodorized kerosene (0.02 to 0.05%) Hexane);
Dichlorodifluoromethane (Freon 12)

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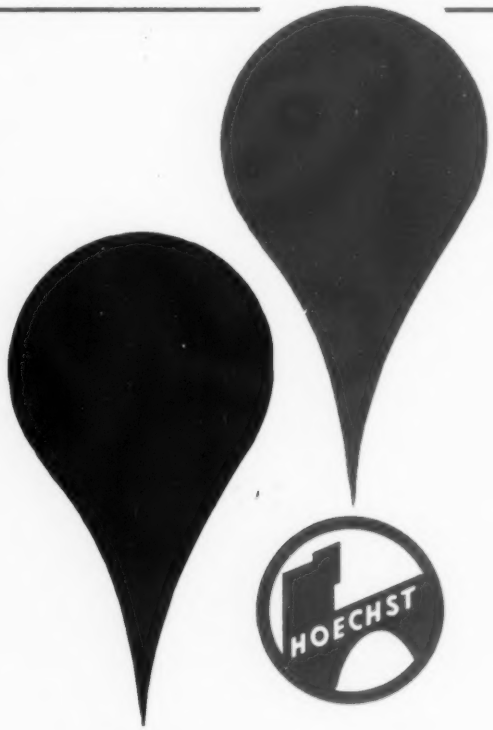

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Benzene, xylene, pine oil, alkylated naphthalenes;
Methylene chloride, chloroform, carbon tetrachloride, ethylene dichloride; and
Aromatic solvents.

Rotenone Dusts

The commonest method of applying rotenone has been to dilute powdered derris or cube root with pyrophyllite talc or dusting clay and then dust the infested plants or animals. The finished dust should contain 0.75% or 1.0% rotenone.

The wetting agent should be added to a sufficient amount of water to prepare a slurry. Then the powdered cube root is added to the tank and the mixture is stirred to produce a thin slurry. Finally, water is added to make the finished spray.

No lime should be used in preparing or applying rotenone dusts. Alkaline diluents should be avoided. Some talcs and clays may be alkaline enough to contribute to the deterioration of rotenone dusts during storage.

Wettable Powders

Powdered cube or derris root contains sufficient natural wetting agent so that good suspensions can be prepared without any additional wetting agent. Wetting of the powders can be speeded up by adding one of the neutral wetting agents to the water used to prepare the spray.

Soy bean flour may be added as a wetter and sticker at the rate of 4 ounces per 100 gallons.

Special wettable powder formulations may be prepared with a solid wetting agent mixed into the powdered cube root, or with one of the liquid surface active agents sprayed on the powder.

Emulsifiable Formulations

Development of non-ionic emulsifiers or blends of non-ionic and anionic emulsifiers has caused an important change in insecticide formulations in general. Emulsifiable formulations may be prepared and stored in ready-to-use form. Dilution with water yields a convenient and effective emulsion spray. Rotenone may also be formulated in this manner.

Cube extract or cube resins may be dissolved in acetone, pine oil, xylol, alkylated naphthalene solvent, or combinations of these solvents. Then, by adding a suitable emulsifier, the emulsifiable rotenone formulation may be prepared.

Rotenone content varies between 0.5 and 5.0%. The lower concentrations of rotenone are usually combined with synergists such as piperonyl cyclonene or piperonyl butoxide or with other insecticides, especially pyrethrins.

The combination of rotenone, pyrethrins and synergist are ideal for the home gardener, because of the wide range of garden pests which may be controlled.

These insecticides are comparatively safe for the gardener to use: Safe on plants, and safe for human beings since no toxic residues remain after application.

Information should be obtained on the phytotoxicity of the solvents and emulsifiers used in garden spray formulations. A good margin of safety must exist between the dilutions which cause plant injury and the dilutions which are recommended for insect control.

Emulsifiable rotenone, 5%, has some agricultural use, but a most interesting use for this type of product is the removal of undesirable fish which is discussed under a separate heading.

Pressurized Sprays

Rotenone is used in aerosols or pressurized sprays for the home gardener. Such formulations fall into two groups: Rotenone with chlorinated hydrocarbon insecticides such as DDT, methoxychlor and lindane, and rotenone with pyrethrins and a synergist such as piperonyl cyclonene. These formulations present two problems. First, the solvent must be selected to reduce plant injury to a minimum and, second, the labels must emphasize the fact that only small amounts of the pressurized spray can be used on plants without risk of injury. In general, the small doses which plants will tolerate are sufficient to control many of the garden insect pests.

Compatibility

Do not use rotenone with lime, lime-sulfur, Bordeaux mixture, or Paris green.

Cube powder is compatible in the spray tank with the following: Aramite, chlordane, "Cryolite," DDT, dieldrin, "Dimite," dinitro-insecticides, ferbam, fixed copper, lead arsenate, lindane, malathion, nicotine sulfate, dormant and summer oils, ovotran, parathion, pyrethrum extract, wettable sulfur, toxaphene, and zineb.

Insects controlled by Rotenone

Cattle grub	7.5 lb. 5% per 100 gal. spray
Fleas, cats	0.75% or 1% dust
Japanese beetle	
Houseflies	
Drosophila	1% dust
Greenhouse thrips	dust
Horse chewing louse	dust
Horse blood-sucking louse	dust
Cattle lice	dust
Sheep and goat lice	dust or spray
Poultry lice	dust or dip properly used
Sheep ticks	dust or spray
Bed bugs	spray
Dog ticks	dust or lotion

Fish Control

Many of our best game fishing lakes fail to provide good fishing because of competition from undesirable fish such as carp, suckers and bullheads. Generally, such lakes may be reclaimed for game fish by eliminating all the fish, closing the lake to reintroduction of rough species and then re-stocking with desired species of game fish.

Rotenone is especially suited for this purpose since it is very toxic to fish at dosages which are relatively non-toxic to fish food organisms. Rotenone remains lethal for about two weeks depending on the temperature, hardness and alkalinity of the water. The lake is allowed to remain free of fish for one to six months, during which

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To make your products BEST SELLERS, start with the best ingredients and in germicides that means ROCCAL. Let us work with you to make your products sell better.

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time the rotenone decomposes and the fish food organisms have a chance to flourish. When such a lake is stocked with either fry or fingerling game fish they will grow rapidly and 12 months later excellent fishing may be expected.

Emulsifiable rotenone, 5%, should be especially formulated for fish control. It should mix readily with water, and, when applied to the surface of a lake, it should settle and disperse throughout all parts with the excess of the emulsified phase finally settling out on the bottom.

Emulsifiable rotenone, 5%, offers the following advantages over powdered cube or derris: It is easier to mix and apply; labor and expense of application is reduced; non irritating to nose and throat of mixers and operators, it is faster in its action on fish and therefore especially suitable for use in running water.

Examples of Rotenone Formulations

	Ingredient Statements	%	pounds	Manufacturing Formulas
Flea Powder	Rotenone	1.0	20	Cube powder 5% rotenone
	Other cube extractives	2.0		
	Inert	97.0	80	Pyrophyllite or talc
Garden Dust	Rotenone	1.0	20	Cube powder 5% rotenone
	Other cube extractives	2.0		
	Sulfur	25.0	25	Dusting sulfur
	Inert	72.0	55	Pyrophyllite or talc
Garden Dust	Rotenone	0.50	10	Cube powder 5% rotenone
	Other cube extractives	1.00		
	Pyrethrins	0.03	5	Pyronyl dust concentrate
	Piperonyl butoxide	0.30		
	Inert	98.17	85	Pyrophyllite or talc
Emulsifiable Garden Spray	Rotenone	2.00	6.0	Cube resin 33.3% rotenone
	Other cube extractives	4.00		
	Pyrethrins	0.40	7.6	"Pyronyl 50-5" emulsion concentrate
	Piperonyl butoxide	4.00		
	Petroleum distillate	3.20	76.4	"Velsicol AR 50" or "Sovacide 544C"
	Alkylated naphthalene	76.40		
	Inert	10.00	10.0	Emulsifier, heat to 80-90° C. to dissolve and filter.
Agricultural Emulsifiable Rotenone 5%	Rotenone	5.0	15	Cube resin 33.3% rotenone
	Other cube extractives	10.0		
	Xylene	82.0	82	Petroleum xylene
	Inert	3.0		
	Warning — Flammable! Keep away from heat and open flame		3	Emulsifier, heat to 90° C. to dissolve and filter.
Emulsifiable Rotenone 5% for Fish Control	Rotenone	5.0	15	Cube resin 33.3% rotenone
	Other cube extractives	10.0		
	Inert	85.0	80	"Velsicol AR50"
			5	Emulsifier, heat to 90° C. to dissolve and filter.
Garden Aerosol	Rotenone	0.5	1.5	Cube resin, 33.3% rotenone
	Other cube extractives	1.0		
	Pyrethrins	0.1	1.9	"Pyronyl 50-5" oil concentrate
	Piperonyl butoxide	1.0	2.0	Acetone
	Petroleum distillate	10.4	9.6	"Sovaspray 100"
	Inert	87.0	10.0	Methylene chloride
			32.5	"Freon" 11
			42.5	"Freon" 12
Pressurized Garden Spray	Rotenone	0.75	2.25	Cube resin, 33.3% Rotenone
	Other cube extractives	1.50		
	Methoxychlor	3.00	10	Acetone
	Inert	94.75	34.42	Isopropyl alcohol
	Warning — Flammable! Do not spray near fire or flame.		25	"Freon 11"
			25	"Freon 12"

Even though emulsifiable rotenone, 5%, acts faster than powdered cube containing 5% rotenone, the ultimate kill after two days is about the same. Therefore there is more powder than emulsion used for fish control because of the lower cost.

The commonly recommended dosage is 0.5 parts per million of 5% rotenone, either cube powder or emulsifiable rotenone. The dosage of 0.5 ppm is equivalent to 1.36 pounds per acre-foot of water.

Labeling

Since neither the insecticidal or piscicidal activity of cube powder is entirely due to rotenone, the manufacturer is entitled to claim the "Extract of cube other than rotenone" as an active ingredient. For example:

Cube Powder

Active Ingredients	
Rotenone	5.0%
Other Cube Extractives	10.0%
Inert Ingredients	85.0%
Total	100.0%

The only precautionary labeling required on the rotenone part of the formulation is:

Warning: To protect fish and wildlife, do not contaminate streams, lakes or ponds with this material.

Other ingredients of the formulation may require a precautionary statement. For example, if xylene were used as a solvent in an emulsifiable formulation, the low flash point of xylene would require a *"Warning — Flammable! Keep away from heat and open flame."*

Advantages of Rotenone

The introduction of many new synthetic insecticide compounds since 1945 has diverted attention from the useful qualities of rotenone. The introduction of residual insecticides made possible insect control with fewer applications of insecticide but also introduced new problems.

Residues

In order to minimize possible hazards to the health of the

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public, spray residue tolerances for twenty-eight pesticidal chemicals on raw fruits and vegetables were established by the Secretary of the Department of Health, Education and Welfare. Rotenone, pyrethrins, piperonyl butoxide, and piperonyl cyclonene were included in a small group which needs no tolerance regulation because they present no health hazard when used according to common agricultural practice. Vegetable growers can use rotenone insecticides the last two to four weeks before harvest and maintain good insect control without risk of exceeding the residue tolerance.

Loss of Bees

A recent report indicates that rotenone is one of the safest insecticides to use where honey bees are active.

Cat Fleas

Cats are more sensitive to chlorinated hydrocarbon insecticides than other animals and therefore most labels on flea powder containing such insecticides warn against use on cats. Flea powders containing rotenone have been used on cats for many years.

Resistant Strains of Insects

Nearly every season brings fresh reports of the newer insecticides failing to control insects or mites as effectively as in previous years. Frequently this is due to the development of resistant strains. As such difficulties arise, it is well to check back over the list of insects controlled by rotenone.

Cattle Grubs

In spite of much experimental work with newer insecticides, rotenone is still the recommended treatment for cattle grubs. When cattle grubs are present in the backs of the animals, spray the backs of the cattle with a suspension containing 7.5 pounds of 5% rotenone per 100 gallons. One gallon per animal should be applied with high pressure sprayer at a pressure of 200 to 500 pounds per square inch. The treatment should be applied when the cysts have opened up so that the spray can reach the grubs. Some recommend that soap or some other wetting agent should be added to the spray.

The rotenone may also be used as a wash, made with 6 ounces of 5% rotenone, 3 ounces of soap powder and 1.25 ounces of tripolyphosphate per gallon. One pint per animal should be brushed onto the backs of the cattle.

—★—

Eastman Product Index

Eastman Chemical Products, Inc., 260 Madison Ave., New York 16, has just published a new six-page product index, listing the industrial and specialty chemicals marketed by the firm.

Chemical property and shipping data are tabulated for acids and anhydrides; alcohols; aromatic intermediates; aldehydes; plasticizers; solvents; and a number of miscellaneous chemicals.

Use information as well as other pertinent data are included for "Epolene" resins and other specialty chemicals marketed by Eastman Chemical Products.

Household Bleaches

(From Page 141)

ing and water softening agent, the chlorinated product is frequently sold as a powder bleach. For distinctive appearance a colored inorganic salt such as $KMnO_4$ or K_2CrO_4 may be included.

Chlorinated T.S.P. serves as a useful ingredient of laundering and cleaning compounds, provided there is no consumer resistance to the odor of sodium hypochlorite. In some parts of the world, hypochlorite compounds cannot be used at all because of this objection.

Most recent development among dry inorganic bleaches is lithium hypochlorite – LiOCl – with an available chlorine content of 35%, undiluted. Efficiency, ease of formulation, convenience in use and absence of bulk are claimed for lithium hypochlorite based dry bleach. Details of this development are given in an article by R. B. Ellestad, published in the September 1961 issue of *Soap and Chemical Specialties.*

(To be Concluded)

Pressure Packing

(From Page 157)

show" package with the winning packages in all categories. In addition, *Soap* published individual photographs of all winners and the judges in a two page spread covering the competition. *Aerosol Age* devoted major space to the winning products in its December issue. Other business publications who carried news stories and/or pictures on the competition included: *Paint & Varnish Production, Drug Trade News, Food and Drug Packaging, Glass Packer, Food Field Reporter* and *Chemical Week.* In connection with the annual Aerosol Package Awards competition, the Aerosol Market Development and Publicity Committee selected seven qualified judges and handled arrangements for the judging.

House and Garden magazine – Consecutive issues of this home service magazine, with circulation near 1,000,000, gave major play to pressure packaging. In May the Newsletter pages featured a variety of new aerosol product types. In June pressure packages for decoration were spotlighted in a four-page illustrated article on a garden party inspired by the Broadway musical "Camelot."

Grit – This national consumer weekly with 880,000 circulation ran a three-column feature with photos in February on aerosols for handicrafts and hobbyists.

Hairdo—The March issue of this bi-monthly magazine (500,000 circulation) carried a two-page illustrated feature article on proper use of hair setting and hair coloring sprays.

Business Week magazine – Featured unusual pressure packaged products in its widely read "Personal Business" pages of the July 29 issue. (Circulation 360,000)

Associated Press—A story on

(Continued on page 168)

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(*From Page* 165)

American women's increasing dependence on aerosols was sent by the women's editor of this largest wire service to more than 800 newspapers coast to coast on September 18.

House Organs – A special story kit with four photographs on pressure packaged work savers in the home was prepared and offered to more than 5,000 editors of company house organs.

Suburban Newspapers – An editorial dealing with the aerosol boom and the established place of aerosol packaging in the home, was syndicated to 1,000 daily and weekly newspapers in September.

CBS Radio Network–Aerosols received an excellent plug on August 5, on the CBS radio network show, "It's New," beamed to between five and six million listeners.

In addition to such major publicity, a regular distribution schedule of feature and news stories is maintained.

Newspaper Mats

Since the first of the year, five photo-caption mats, each in two-column format, have been syndicated to 1,000 U. S. suburban newspapers. Photographs for these mats show product types in use, but do not show proprietary labels. Subjects so far this year include spray starch, dessert topping, shoe polish, topical antiseptics, gun lubricant and other pressure packaged products for sportsmen. These mats are used widely and reach millions of consumers each year.

News Fillers

With the Committee's guidance, the agency prepares and distributes to newspapers filler material, usually of a seasonal nature. Topics included in this year's news fillers have included pressure packaged products for hobbies and handicrafts, the 1960 product survey of aerosol production, variety of new push-button products, aerosols for car maintenance, and cosmetics and grooming aids for men.

The seven-minute color 16 mm. film, produced several years ago especially for television, has been shown on more than 125 noncompeting TV stations, with no charge for telecast time. In March 1961 it was announced that this film would be available at no cost for use by CSMA member companies, and business and civic groups interested in the subject. Since that time six color prints have been kept in circulation to companies and groups requesting the film.

Other Projects

The CSMA Aerosol Market Development and Publicity Committee and its agency have also been active on other projects, not aimed directly at creating published publicity, but with the same purpose. A letter in a light vein was recently sent to some 300 newspaper wire service and magazine writers asking their cooperation in limiting, or eliminating, use of the word "bomb" in connection with

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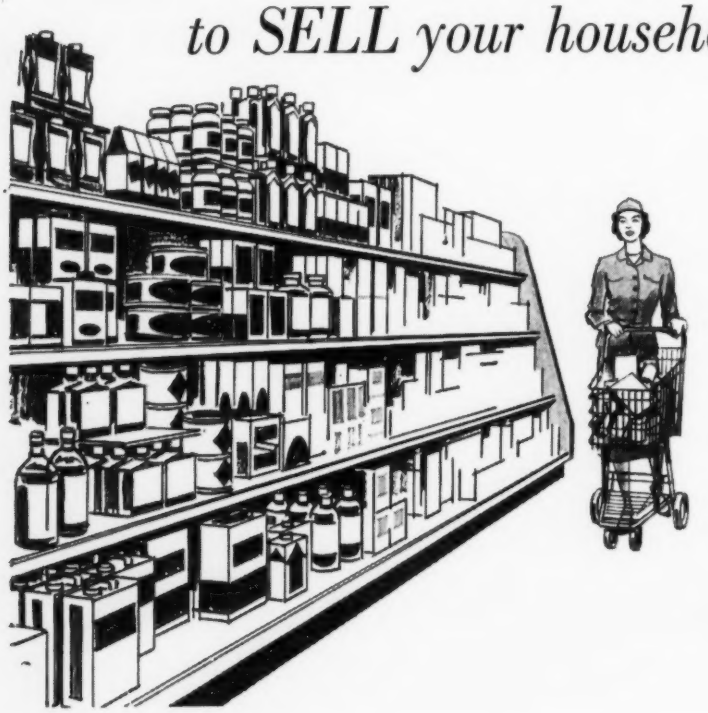

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CSMA Aerosol Market Development and Publicity Committee agency staffers Bob MacDonald, left, and Jack Davis demonstrate use of pressure packaged automobile polish to model for publicity photography.

most of today's aerosol products, for which it is a misnomer. Other follow-up mailings are planned in this campaign to persuade some writers to break this unfortunate editorial habit which dates back to the earliest days of aerosols.

The Committee is currently seeking the help of suppliers of pressure package components and fillers in updating the long and growing list of available aerosol product types. This roster of current product types is a valuable tool in gaining interest of editorial people and helping to make them aware of the vast variety of pressure packaged products.

Another project is concerned with obtaining information from sales representatives of aerosol loaders and marketers about retailers who are doing an outstanding job of aerosol product display and/or demonstration, so that retailing case history stories and photos can be developed for placement with publications serving hardware, housewares, drug and cosmetic, grocery and supermarket trade publications. Several such stories are now being worked on.

Other innovations, plus a continuation of the publicity techniques that have helped build acceptance and sales for all aerosol packaged products in the past, are expected to add greater and greater impact to the over-all promotion and marketing efforts for pressure packaging and help to maintain the health rate of growth of aerosol sales.■

Technical Personnel

(*From Page* 123)

search is usually the "favor" type and is slow in producing results. Chemical and engineering societies offer clearing houses where members may find listings of job opportunities. Professional advertisements abound under "Help Wanted" in newspapers and professional journals.

Professional placement agencies are a good source of leads. Recruiters keep in constant touch with companies and are able to evaluate experience and training on a preliminary screening level, based on their knowledge of employer requirements and standards. They know when companies are actively seeking assistance, and avoid wasteful time-consuming interviews. An additional service is that they negotiate for the candidate on salaries and related financial arrangements. Professional as-

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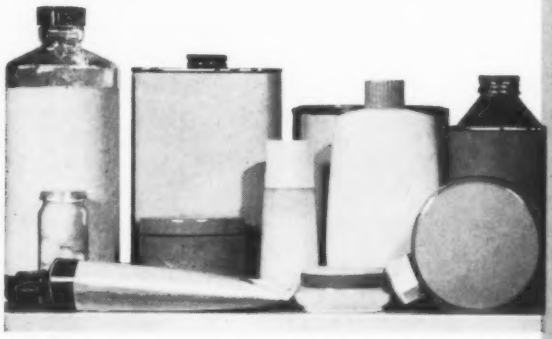

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sistance is given in the preparation of a resume, a fact sheet which should be brief and to the point. It should indicate objectives and present qualifications backing up these objectives.

Whichever method you utilize, prepare for the job move by analyzing your capabilities and experiences carefully. Remember that compensation is in proportion to the relative value of your services. Be realistic in your demands. This is a volatile market for companies and job seekers. In the long run, finding the right man or the right job is ⅓ inspiration, ⅓ perspiration and ⅓ luck.■

Germicidal Soap

(*From Page* 74)

of the seven subjects, and the average scrubbing index of 116.4 is significantly poorer than that for the soap cleanser.

This surprising superiority of the cleanser is due to its soap vehicle. In this connection, a comment made by Blank in his paper on surgical scrubs is noteworthy, viz., "In general, the higher the alkalinity of any scrubbing process, the higher will be the negative charge on the cutaneous surface and on the bacteria from the cutaneous surface. Therefore, the alkaline detergents are more efficient than the acid detergents in mechanical cleansing." The liquid soap cleanser is mildly alkaline (pH 9.3) while other leading surgical scrubs are usually acid in reaction – in the vicinity of 5.5.

Repeated Insult Patch Test

The mildness of this liquid soap cleanser was investigated on human subjects under the stringent testing conditions as described by Draize. (7) Fifty subjects were patch-tested on their upper arms with 0.5 ml. (diluted 1:1 with water), applied by means of Elastoplast patches. The patches were kept in contact with the skin overnight. The following morning, the patches were removed and the contact sites examined for reactions. This procedure was repeated every other day for two applications. The test solution was freshly prepared for each application.

After the tenth application, a 10-day rest period followed, and then a final or challenge patch was applied. The next morning, the contact sites were examined for reactions.

Results of this study indicated that the liquid soap cleanser containing lecithin is without primary irritation or sensitizing effect.

Table II. Scrubbing indexes of soap cleanser with 1% hexachlorophene* and 3% hexachlorophene detergent preparation**

Subject	Before scrub (A) (total counts in basins 1 & 2)	Scrub	After scrub (B) (total counts in basins 3-6)	Scrubbing index B/A
1	1866	5 minute scrub with liquid soap skin cleanser (1% hexachlorophene)	621	33.3
2	1250		1121	89.6
3	840		330	40.0
4	4400		800	18.2
5	2410		290	12.0
6	990		810	81.8
7	2640		320	12.1
				Average scrub. index-41.0
8	2246	5 minute scrub with liquid detergent skin cleanser (3% hexachlorophene)	2122	945
9	2070		632	30.5
10	1494		1229	82.3
11	1155		1368	118.5
12	468		984	210.3
13	1085		848	78.1
14	941		1886	200.4
				Average scrub. index-116.4

*—"Petro-Phylic" Liquid Skin Cleanser
**—"Phisohex"

During the first stage of ten applications, 12 subjects of the 50 showed slight transient erythema, and the remainder showed no erythema. After the challenge patch, no erythema was noted on any of the 50 subjects.

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New Purex HQ

(*From Page* 69)

"Cuticura" soap was purchased by Purex in August, 1961, for $3,000,000 in cash. Purex earlier began its diversification into the industrial chemical specialties field with the acquisition of Franklin Research Co., and slightly over a year ago purchased Turco Products Co., Wilmington, Calif., producer of industrial cleaning compounds. Other Purex acquisitions include Allen B. Wrisley Co., Chicago, maker of soaps and toiletries; Manhattan Soap Co., and "Old Dutch Cleanser" of Cudahy Packing Co.

Purex, headed by A. C. Pelletier, chairman of the board, and A. C. Stoneman, president, now has 34 manufacturing plants, 24 of which are located in the United States and 13 in Canada and other countries.

Rated as one of the 500 largest industrial companies in the United States, Purex in the past year made major plant and warehouse additions at St. Louis; Tacoma, Wash.; Roanoke, Va.; Dallas; Omaha, Nebr.; East Chicago, Ind.; Bristol, Pa.; Atlanta, Ga., and South Gate, Calif.■

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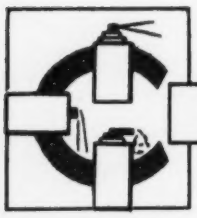

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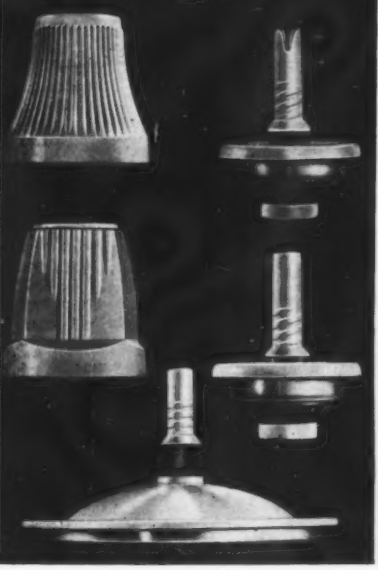


PREFERRED BY MANUFACTURERS — for all types of containers, open-top as well as 1" diameter openings. Permit uniform gassing at highest speeds. Can be automatically fed onto containers. Valve parts are completely, securely assembled. Valves are available with color-enameled mounting cups, highest-quality chemical and corrosion-resistant interior coatings. Flow rates and component materials are available to meet specific product requirements . . . to assure maximum efficiency. Exclusive, patented, positive-action covers protect products.

PREFERRED BY CONSUMERS — valves dispense in the most natural, convenient, effective way possible . . . pointing the product DOWN where it's wanted. Valves are dependable — easy to control, never clog, always stay intact.

. . . which is why, year after year, so many manufacturers continue to use CLAYTON . . . why manufacturers of new foam, cream and liquid products specify the valves and covers TIME TESTED AND PROVED ON HUNDREDS OF MILLIONS OF CONTAINERS!

For complete brochure on valves and covers write, phone or wire:

CLAYTON CORPORATION

4205 FOREST PARK BOULEVARD • ST. LOUIS 8, MISSOURI

A *New* APPROACH TO AIR FRESHNESS by JOHNSON'S WAX...

Made Possible by VCA

Engineered Valve and Specially Designed* Actuator

The responsibility for supplying a Valve and Actuator assembly for a unique package like the striking new "Glade Mist" Air Freshener was dependent upon a bold, creative approach to engineering, practicability and production economy.

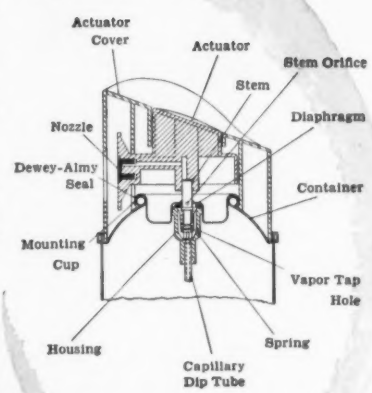
S. C. Johnson and Son, Inc., designers of the distinctive overcap entrusted this important project to VCA engineers because VCA accomplishments in all phases of aerosol packaging are well known . . . well established.

The end result is winning praise everywhere . . . from manufacturers, retailers and consumers alike.

GLADE MIST'S self-contained, one-piece VCA Valve and Specially Designed Actuator simplify air freshener dispensing problems, assure positive, repetitive directional control . . . quickly and inexpensively.

There's no cap to lose . . . no accidental discharge. Mounting cups are epoxy coated; caps embossed with "how to operate" instructions; mechanical break-up starts right in the can with the vapor tap helping the process along and adjusting the spray rate; foaming from the orifice is impossible.

For a creative approach to aerosol packaging, consult VCA. Phone or write today!



*Patented

VCA INCORPORATED

Visit us at the 48th Annual CSMA Meeting, Roosevelt Hotel, N. Y. Dec. 4-6.

CSMA 1946

VALVE CORPORATION OF AMERICA, Inc.
720 Fairfield Avenue . Bridgeport, Conn.

Midwestern Rep.: Buckingham Associates, 7634 North Rogers Ave., Chicago 26, Ill.

And one shall be leader... business leadership isn't an honorary degree—it's earned by doing a job better than anyone else!

Chase stands at its 29th year milestone, acknowledged leader in packaging for one reason: superior research on more difficult problems in more product classes.

PRODUCTION VERSATILITY—Ample facilities to handle oil and water base, liquid and foam products, of all types in small or large quantities. No minimum run required and no maximum limit!

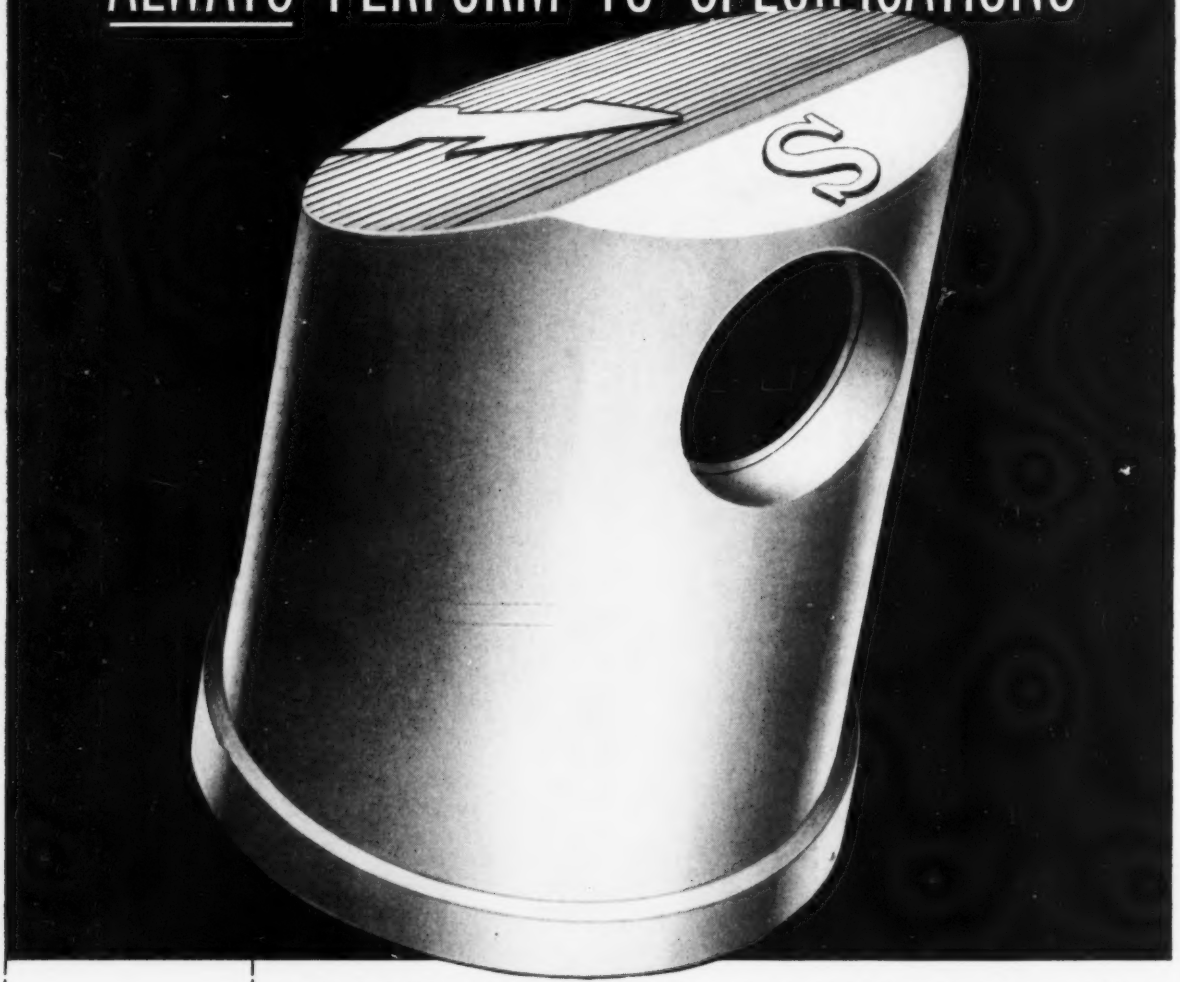
INCREASED PLANT FACILITIES—Our plant is centrally located for ideal distribution, with both rail and truck facilities. We offer warehousing, drop shipping in bulk lots, direct pick-up and routing by major national truck or rail lines.

Write or Phone: **CHASE PRODUCTS COMPANY**—Maywood, Illinois

Contract fillers of AEROSOL and PRESSURIZED PRODUCTS

From Schrader's unmatched facilities . . .

MECHANICAL BREAK-UP ACTUATORS THAT ALWAYS PERFORM TO SPECIFICATIONS



An aerosol product can only be as good as its actuator. You can be *sure* your millionth actuator will create the identical spray pattern as the first . . . with Schrader. *Fact:* This Schrader mechanical break-up actuator is 100% tested during production, and in addition spot-checked at 150°F. to 150 lbs. psi. *Fact:* Behind it are Schrader's unmatched engineering and research facilities, plus unique production techniques. *Fact:* This milestone achievement in aerosol engineering dispenses a product-tailored pattern . . . and always in the right direction.

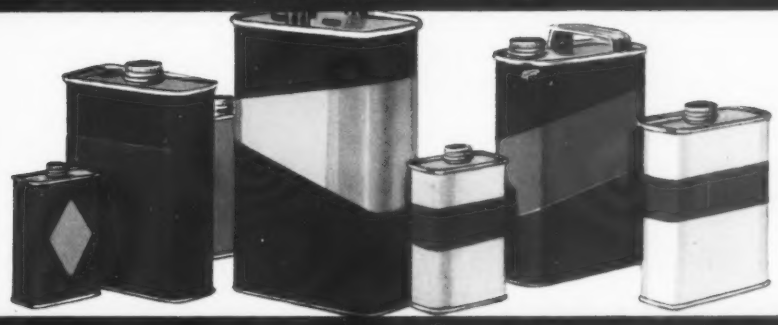
Call on Schrader for the finest in aerosol engineering and technical help . . . from the company with the most modern facilities in the aerosol field.

Visit the Schrader suite during the C. S. M. A., December 4-6, Roosevelt Hotel, New York.

Schrader® a division of **SCOVILL** **Aerosol Valves**

A. SCHRADER'S SON • *Division of Scovill Manufacturing Company, Inc.* • **470 Vanderbilt Ave., Brooklyn 38, N. Y.**

NO MATTER HOW YOU LOOK AT IT CONTINENTAL HAS THE RIGHT "F" STYLE CAN FOR YOU



Top and bottom, front and back, Continental's "F" style can has features you want:

- Hinged plastic Flip Cap®, inserted without solder or flux marks, allows clean, eye-catching lithography on top.
- Broad, flat sides give ample room for your brand name, individual design and sales message.
- Recessed well on the bottom makes for easy stacking, firm displays and neat shelving.

At Continental's Technical Center in Chicago, an army of researchers are always at work creating new containers to meet new demands. Serving you better, fitting our product to yours, has made Continental a design leader in the packaging field. That's why we can say—Whatever you package, whatever you produce, Continental has the right container for you.

CONTINENTAL CAN COMPANY

Eastern Division: 633 Third Ave., New York 17
Central Division: 135 S. LaSalle St., Chicago 3
Southern Division: 905 Florida Ave., Tampa 2
Pacific Division: Russ Bldg., San Francisco 4
Canadian Division: 790 Bay Street, Toronto 1
Overseas Division: 633 Third Ave., New York 17

Work saver, profit maker—aerosol!

No one had to sell Mrs. America on the advantages of push-button laundry starch. The need was there—what with growing families, children's clothes, party dresses, extra laundry work at home. Spray starch was a welcome work-saver, but formulating it for aerosol packaging posed a real manufacturing problem.

One of the first to solve it was Aerosol Corporation of America, whose *Glis* spray starch was introduced early in 1960. Immediately successful, Glis is a leading brand today. So convinced is Aerosol Corporation of the tremendous potential of aerosols, it markets aerosol products exclusively.

Such latent demand exists for other new aerosol products—perhaps for a product you now market in another form. You need no heavy capital investment or all the answers to "go aerosol." *Write Pennsalt.* As producers of ISOTRON® propellents—used to power scores of successful products—we offer valuable counsel to marketers—can recommend contract packagers who can supply you with all the help you'll need with product formulation, technical aid and packaging.

ISOTRON—*The Key to Modern Living*

Pennsalt Chemicals
ESTABLISHED 1850

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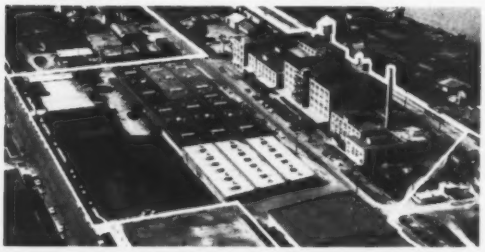
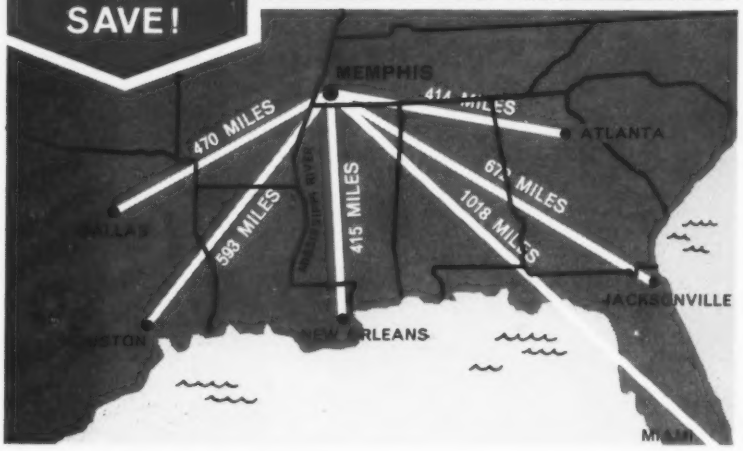
PENNSALT CHEMICALS CORPORATION
Three Penn Center
Philadelphia 2, Pa.

for you who SELL SOUTH in AEROSOLS

Centrally located to help you sell South and SAVE!





Because of its strategic location in the Mid-Center of the Mid-South, Hot Shot Quality Products can save you considerably, both time-wise and freight-wise. Transportation from Memphis south, southeast, and southwest can be arranged over eight rail lines, in our own trucks or common carriers, or by barge down the Mississippi River.

HOT SHOT HAS THE FACILITIES TO SERVE YOU!

cold & pressure filling lines

Fully automatic, these lines incorporate all stainless steel KARTRIDG-PAK equipment.

liquid filling line

Also completely automatic. Fills any size bottle, glass or can, using conventional or sprayer type tops.

product marketing experience

Hot Shot Quality Products has a proven performance record of successfully merchandising aerosol products through all levels of distribution. More than eleven million units have been sold.

big capacity

We can package and fill from 20 to 50 thousand units on each eight-hour shift.

advertising and research facilities

We maintain professional advertising specialists and trained laboratory and research experts to help you with your marketing and technical problems.

warehouse facilities

You have available to you, for as long as your requirements demand, complete and extensive warehousing in six major southern cities.

the South's newest and most complete aerosol filling plant!

Whatever you package in aerosols, it will pay you to investigate the *complete* facilities of Hot Shot Quality Products, Inc., Memphis, Tennessee, in serving your manufacturing, filling, and packaging requirements.

Their modern, up-to-the-minute equipment and highly skilled personnel offer full service custom filling to serve your marketing needs in the south.

If you presently manufacture in the north, east, or west, find out what distinctive advantages are yours when you entrust the *entire* job to Hot Shot Quality Products.

Contract Service Division

Hot Shot®

Quality Products, Inc.

MEMPHIS, TENNESSEE

Hot Shot
Quality Products, Inc.
Dept. SCS
P. O. Box 297 • Memphis, Tennessee

Gentlemen: We are interested in receiving, without cost or obligation to us, additional information on your contract filling service.

Company _____

Name _____

Address _____

City _____ State _____

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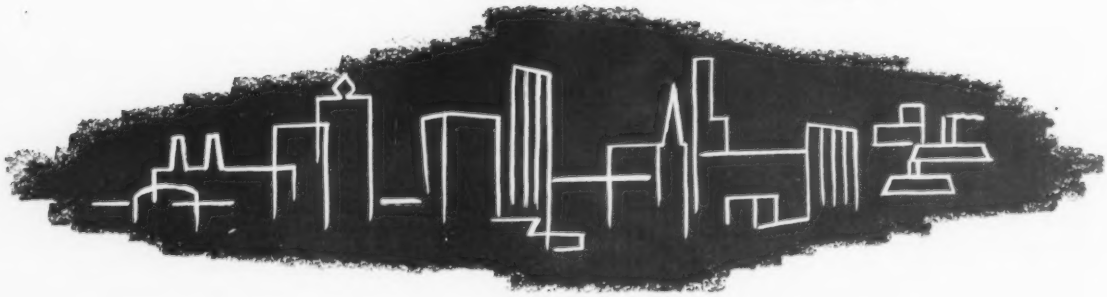

serving your container needs

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ALL STYLES—ALL SIZES—ONE THRU FIFTEEN GALLONS

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ALL TYPES OF PROTECTIVE INTERIOR LININGS

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POURING EQUIPMENT

•

YOUR DESIGN LITHOGRAPHED IN OUR OWN PLANT

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SEAMLESS & PIECED

CENTRAL CAN COMPANY 3200 S. Kilbourn Ave., Chicago 23, Ill.

packaging notes

In Anchor Hocking Posts

Anchor Hocking Glass Corp., Lancaster, O., recently announced the appointment of Nor-

Paul R. Rector

man J. Ogilvie as director of research and engineering for the firm. Mr. Ogilvie, who joined the company in 1939, will be headquartered in the firm's new research and engineering laboratories now nearing completion at Lancaster.

It was also announced that Paul R. Rector has been named manager of container scheduling, sales services, and finished goods inventory for the company's glass container division. Mr. Rector, who joined the company in 1934, has served in production, sales planning and sales management for the container division.

—★—

Mulford Elected O-I Pres.

Ray H. Mulford has been elected president of Owens-Illinois Glass Co., Toledo, O., it was announced recently. He succeeds Carl R. Megowen who was elected vice-chairman of the board and chairman of the executive committee. The changes were said to result from a realignment of executive responsibility designed to strengthen the firm's top echelon.

Mr. Megowen has been president of O-I since 1950. The post of vice-chairman of the board is newly created. He assumes chairmanship of the executive committee from J. P. Levis, who remains as chairman of the board and chief executive officer.

Mr. Mulford, who joined O-I in 1933 as budget supervisor in the Clarion, Pa., plant of the glass container division, has been executive vice-president of the company since October 1960, and was elected a director last July.

—★—

Jean Masbach Dies

Jean Masbach, 64, board member of Brockway Glass Co., Brockway, Pa., and head of the firm's New York sales office, died recently. Mr. Masbach joined Brockway in 1927 as a salesman in the Baltimore office.

—★—

IMCO Appoints Durkin

Leroy E. Durkin was recently appointed sales manager of the eastern division of IMCO Container Co., a division of Rexall Drug and Chemical Co., Los Angeles. Mr. Durkin is responsible for the development and administration of all sales in the division. He was formerly a member of the New York sales force of IMCO for eight years.

—★—

Successful PMMI Show

The Packaging Machinery Manufacturers Institute Show of 1961, held Nov. 8-10 at Cobo Hall, Detroit, had a total attendance of 14,787, according to the Institute. Over 220 manufacturers of packaging machinery and related materials participated in the event, it was reported.

The first PMMI-sponsored technical seminar, under the title "Planned Maintenance – the Profit Tool of Modern Management," had an attendance of 775 during its two day program.

New O-I Plant

Owens-Illinois Glass Co., Toledo, O., recently announced the purchase of a building and a 13.8 acre site in Newburyport, Mass., for the manufacture of blown plastic bottles for liquid household products.

Production will begin after the first of the year in the building formerly owned by the Columbia Broadcasting System, Inc. This is O-I's 13th plant for the manufacture of blown plastic bottles.

—★—

Bemis Ups Two

P. J. Ferree has been named vice-president and general manager, of Air Formed Products Corp., Nashua, N. H., a subsidiary of Bemis Brothers Bag Co., St. Louis. Air Formed, acquired last year by Bemis, is a developer and producer of blow-molded plastic containers.

Mr. Ferree, who joined Bemis in 1942, was most recently plant manager at Flemington, N. J., a position he held since 1959. He is succeeded in that capacity by A. F. Keating, who was previously in charge of sales promotion of laminated textiles for the plant. Mr. Keating joined Bemis in 1938 as a sales correspondent in New York.

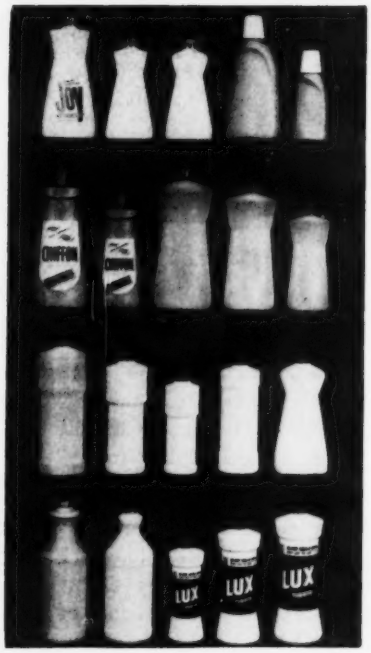
P. J. Ferree

Automated Line to Produce Plastic Bottles

AN automated plastic bottle production line, said to triple current manufacturing speeds, has been developed by Continental Can Co., New York. Top speed of present blow molding lines is 35-40 containers per minute. Continental's new unit is claimed to produce 125 bottles per minute.

The main feature of the line is a blow-molder which has an ultimate speed capability of 250 bottles per minute, according to Continental. Developed in conjunction with it is a unit to trim bottle necks, a finishing machine to ream the bottle and place a pouring lip on the neck edges, and a flame curing unit that treats the bottle surface to permit subsequent decorating – including label adhesion.

The line, which can handle any polyolefin resin, will be used primarily for polyethylene quart bottles, when installed at the Cleveland plant of the firm's plastic bottle and tube division. The blow-molder can produce bottles in a variety of shapes, and in sizes ranging from 12 to 32 ounces.



Some of the bottle shapes and sizes, 12 through 32 ounces, which can be blow molded on Continental Can's new high speed plastic bottle production line.

A four-color label imprinter which flame cures both sides of irregularly-shaped containers is expected to be operational during the first quarter of 1962. This unit, also running at 125 bottles per minute, is equipped with a two-second flame curer on each side. The imprinter applies four colors to one side of the bottle, moves it to the other end of the unit and applies the colors to the reverse side.

All the units in the line were developed at Continental's technical center in Chicago. The basic design of the blow-molder can be used to build larger units to turn out bottles with larger capacities, but a need for such equipment is not yet anticipated by Continental.

View of Continental Can's plastic bottle machine with blow molder, at left, being fed by a conventional extruder. Shown are some of the men responsible for the unit, left to right: Robert F. Windstrup, associate director of Metal R&D equipment development; John S. Bozek, associate director of the firm's container development; Justin Simpson, general manager of metal research & development, and Dr. R. B. Mesrobian, general manager of general packaging research and development.

—★—

Considine to National Can

Appointment of Frank W. Considine as general manager of sales of National Can Corp., Chicago, was announced recently. He was formerly president of Great Lakes Glass Co., and vice-president of the Metro Glass division, National Dairy Products Corp., Jersey City, N. J.

—★—

Cost Saver from Roth-Pak

Roth-Pak, Inc., New York, has introduced a new hollow "roll on" ball for deodorant packages. Available in any color and diameter sizes from .700 to one inch, the balls are estimated to save the industry several hundred thousand dollars annually.

—★—

Contract Packagers List

The fourth edition of "Directory of Contract Packagers and Their Facilities," published by the Packaging Institute, Inc., New York, is now available, at $5 per copy. The directory is a compilation of the results of a questionnaire sent to contract packagers to establish areas of specialization.

Containing 593 listings of companies in the United States, Canada, Mexico, Australia, England, Japan, Germany and Sweden, the directory covers types of packaging done, facilities available, acceptable products, machinery in stock and quality control features.

From G. Barr and Company

. . . this aerosol product had to survive the toughest of all scientific "obstacle courses"

The point is, no aerosol product can long survive in the market place without dependable packaging. The stakes are too high to rely solely on arbitrary methods of quality control. G. Barr's answer: statistical analysis. This scientific method assures you, within the limits of mathematical certainty, a *definite perfection level* of aerosol packaging on every production run. It means that defective lots of containers, valves, caps, dip-tubes—even labels—can be pin-pointed *before* the filling stage. On the production line, it allows precision evaluation of the more than 60 visual inspections conducted. This "obstacle course," plus meticulous formulation, adds up to your aerosol product's most reliable survival insurance.

WRITE FOR FREE BROCHURE

It will pay you to investigate how Barr's exclusive statistical quality control program can improve your product's aerosol performance. For full details, simply mail the coupon.

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Please send me your Brochure without cost or obligation.

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Product Manufactured_____

G Barr and company

General Offices: 3601 South Racine Avenue
Chicago 9, Illinois

WORLD'S LARGEST PRODUCER OF PRIVATE LABEL AEROSOLS

Seven member panel of judges with winning aerosol packages during the Tenth Annual Packaging Contest, sponsored by the Chemical Specialties Manufacturers Association. Judges are, Virginia Graham, television and radio personality, holding top honors winner, "Glade Mist Air Freshener," and seated left to right: Peggy Sipprell, promotion director, Shopping Center Show-case; and Isobel Kratovil, New York City housewife. Standing, left to right: George Glenn, editor, Chain Store Age; grocery edition, Gilbert Snyder, president, Snyder Associates; Lawrence H. Zahn, Ciba, Inc. president, Packaging Institute; and Charles Robertson, professor of arts, Pratt Institute.

AEROSOL AWARD WINNERS

"Glade Mist Air Freshener," produced by S. C. Johnson & Son, Inc., Racine, Wis., won the grand award as the best package entered in the 1961 Aerosol Packaging Awards Competition conducted by the Aerosol Division of the Chemical Specialties Manufacturers Association.

Judged best designed among a record 493 entries, the room air freshener can be sprayed without removing the cap. The spray button of the aerosol is flush with the top of the cap, providing an "integrated" cap arrangement. Directional control of the spray is provided through a contoured, blue-plastic top.

(*Turn to Page* 265

Winners, facing page

1. **Horticultural Products**
   "Dew Garden Spray"
   Durazone (Sales), Ltd.

2. **Paints, Enamels, Protective Coatings, Paint Removers**
   "Fixatif Spray"
   Eagle Pencil Co.

3. **Household Products**
   "Spray Wax"
   Renuzit Home Products Co.

4. **Industrial Products**
   "Dry Lube"
   Brandywine Photochemical Co.

5. **Automotive Products**
   "Bumper Wax"
   Turtle Wax, Inc.

6. **Medicinal-Pharmaceutical Products**
   "Atha-Spray"
   Young's Rubber Corp.

7. **Hair Preparations**
   "French of London Spray Set"
   French & Scott, Ltd.

8. **Insecticides, Repellents, Moth Proofers**
   "Max Fly Killer"
   Mondart, Ltd.

9. **Food Products**
   "Reddi-Wip Whipped Cream"
   Reddi-Wip, Inc.

10. **Veterinary and Pet Products**
    "Spray for Bitches in Season"
    Messrs. Osmonds (Pharmaceuticals), Ltd.

11. **Shave Products**
    "Seaforth Spiced Minute Shave"
    Chesebrough-Pond's, Inc.

12. **Other Personal Products**
    "Tex Sunspray"
    Durazone (Sales), Ltd.

This Page, left to right:

Perfumes, Colognes, Toilet Waters (Dressing Table Size, Metal Container)
"Shari Mist Cologne"
Rexall Drug Co.

Perfumes, Colognes, Toilet Waters (Dressing Table Size, Glass Container)
"L'interdit"
Givenchy

Perfumes, Colognes, Toilet Waters (Purse Size)
"Crepe de Chine"
House of Fragrance, Inc.

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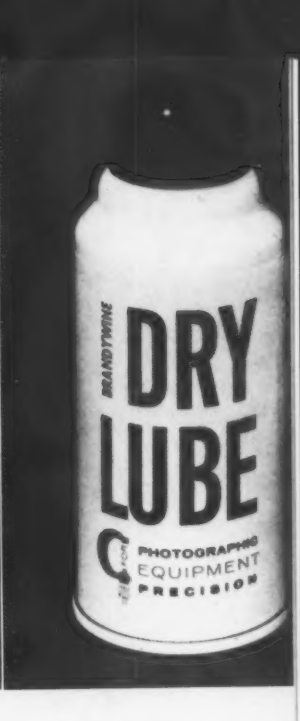
2



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12

MARLEX*

...first for bleach bottles

Lightweight (about 1/15 as heavy as glass)! Unbreakable! Less costly to handle and ship! Added point-of-sale appeal from attractive new colors and shapes! To bleach marketers, these are unquestioned advantages for blow-molded plastic containers. The problem was finding a suitable plastic. The first one to do the job was MARLEX!

Unaffected by bleach chemicals, MARLEX blow-molding resins also possess the rigidity, strength, and easy processability needed to produce low-cost containers for this "hard-to-hold" household product. Even for large one-gallon sizes, MARLEX does the job economically.

Look to MARLEX for the answer to all your packaging needs. Containers made of MARLEX high density polyethylenes or ethylene copolymers are light, tough, virtually unbreakable and low cost . . . they are unaffected by most acids, solvents, alkalies, oils, greases . . . cannot rust, rot, or corrode . . . capable of withstanding temperatures from –180°F to 250°F.

*MARLEX is a trademark for Phillips family of olefin polymers.

For more information, see your container supplier . . . or contact us.

PHILLIPS CHEMICAL COMPANY
Bartlesville, Oklahoma
A subsidiary of Phillips Petroleum Company

PHILLIPS 66 MARLEX PLASTICS

Adopts Plastic Container

Sterwin Chemicals, Inc., New York, recently introduced a new plastic gallon jug for "Roccal," its quaternary ammonium sanitizing agent. The new container is said to be unbreakable, light in weight and combine safety with economy. Ease of handling, and space saving features are also claimed. Directions for use are permanently printed on the container.

—★—

Acquires White Metal

Rexall Drug and Chemical Co., Los Angeles, recently announced the acquisition of White Metal Manufacturing Co., New York, for an undisclosed amount of Rexall stock.

White Metal produces collapsible metal tubes, slugs and aluminum, and has plants in Hoboken and Hawthorne, N. J., and Indianapolis, Ind.

Stanley M. Rumbough, Jr., serving as president, has been named chairman of the board of White Metal, and Charles Stiassni, formerly executive vice-president and treasurer, has been named president.

—★—

John Nagle Dies

John J. Nagle, 69, formerly president and chairman of the board of Crown Cork and Seal Co., Philadelphia, died Nov. 4, in Fitkin Memorial Hospital, Neptune, N. J., from injuries suffered in an automobile accident on that date. He had been crossing the road near his summer home in Spring Lake, N. J., when he was struck by a car.

—★—

Imco Adds Two Plants

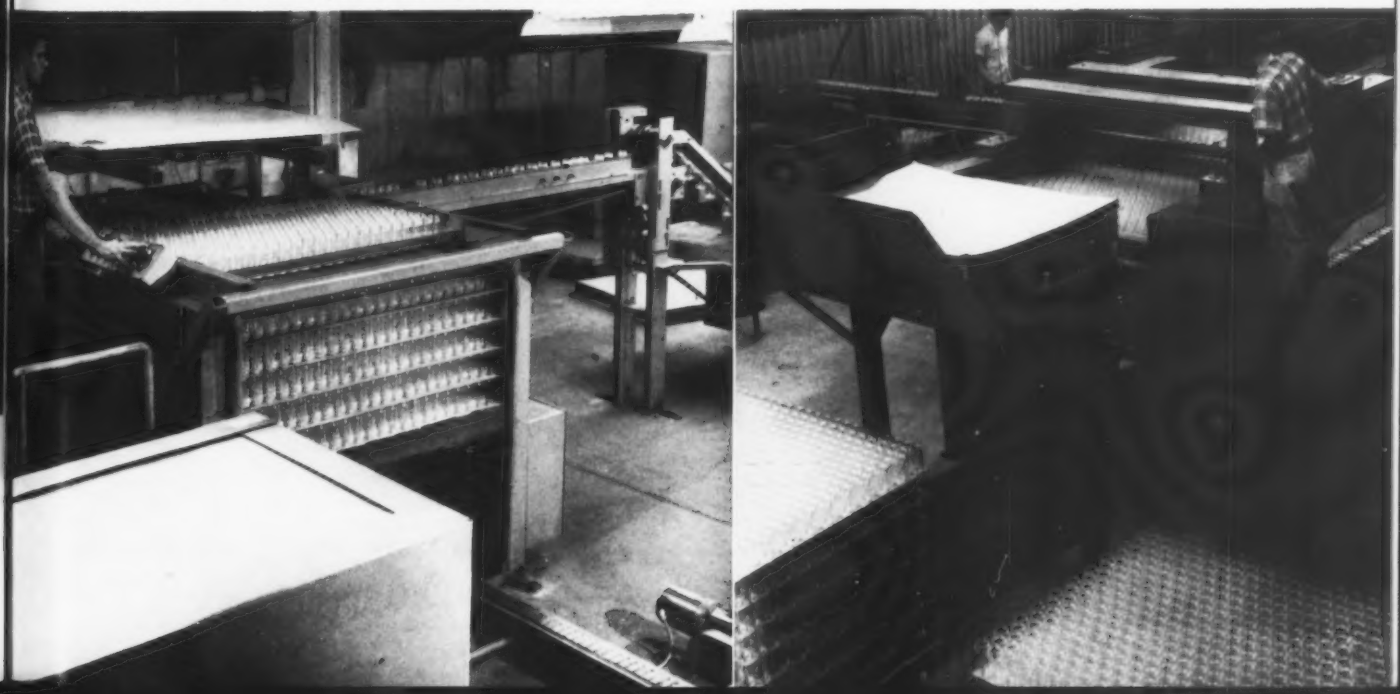
Imco Container Co., Kansas City, Mo., recenty announced the addition of two new plastic container production plants in Los Angeles and Cicero, Ill. The new plants expand the customer service of Imco which has other plants in New Jersey, Virginia, Indiana and Canada.

Polyethylene-Steel Drum

A 55 gallon materials handling container, combining the corrosion resistance of polyethylene with the strength of steel, has been introduced by Redmanson Corp., York, Pa.

Designed for use where chemicals, pharmaceuticals and other products require an inert lining surface with a strong outside covering, the new combination is claimed to withstand severe handling without damage to the contents. The rugged, non-breakable liner is removable for cleaning and emptying of contents. Drum is closed with a tightly fitting polyethylene cover and sealed with a bolted steel closure ring.

Bulk palletizing equipment developed by American-Wheaton Corp. for makers and users of glass containers was revealed in paper given by S. J. Wallace at Glass Container Manufacturers' Institute's Packaging Seminar, Oct. 27. Automated equipment, capable of racking and stacking up to 7,000 bottles on single pallet, speeds handling, saves warehouse space, enables packers to buy cartons separately. American Can and Wheaton Glass pooled know-how to eliminate glass-to-glass contact and consequent breakage in handling. Left: Racking and stacking of containers on pallet is being completed. Right: Palletizing line in operation.



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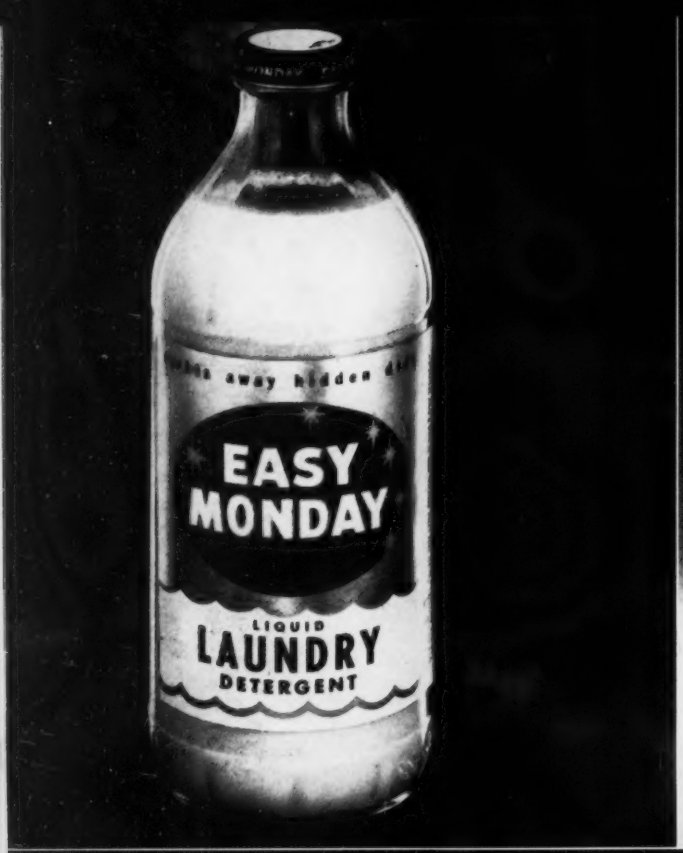
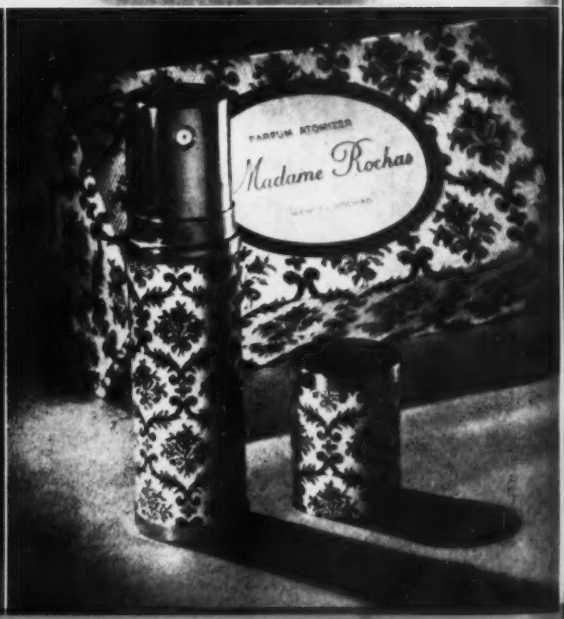
WHAT'S NEW?

"Handy Andy" with ammonia just introduced nationally by Lever Brothers Co., New York, is a white, opaque liquid all purpose household cleaner packaged in 15 ounce and 28 ounce glass bottles, retail priced at 39 cents and 69 cents, respectively. Price-off packs are offered in both sizes: eight cents on the regular and 15 cents on the giant size. A 25 cent value DuPont sponge cloth is featured as an on-pack premium with the giant size bottle of "Golden Handy Andy," companion product to "Handy Andy" with ammonia.

Simoniz Co., Chicago, is offering a free "Sta-Soft" polyurethane sponge, packaged in a stick-on bag, with each can of its "Vinylwax" floor wax. Both are packaged in imprinted plastic bags to reduce the possibility of separation or loss. Suggested retail price of the pint size of "Vinylwax" and the "Sta-Soft" sponge is 59 cents; 98 cents for the sponge and quart size of wax; and $1.79 for half-gallon sizes of wax and the sponge.

"Melt" windshield de-icer aerosol spray is now being marketed by Westley Industries, Cleveland, O. Claimed to be harmless to chrome, rubber and automobile finishes, product also unfreezes doors and locks. Packaged in a 16 ounce aerosol container, "Melt" retails at $1.35. Container is supplied by Crown Cork & Seal Co., Philadelphia; valve by Precision Valve Corp., Yonkers, N. Y.; and filling is by Eveready Pressurized Products, Inc., Cleveland, O.





New "Easy Monday Liquid Laundry" detergent of Sun Products Corp., Waco, Tex., is pale blue in color. Product is packed in a quart glass bottle topped with a blue and white screw-top closure. Label, printed in blue, silver and gold, is supplied by Graphic Arts Label Co., Ft. Worth, Tex. Closures are from Owens-Illinois Glass Co., Toledo, O., who also supplies bottles along with Hazel-Atlas Glass Co., Wheeling, W.V.

"Miss Bergdorf," "Number Nine" and "Nandi," spray colognes from BG Perfumes, Inc., New York, are packaged in two ounce extruded aluminum "Peerasol" containers by Peerless Tube Co., Bloomfield, N. J. Retailing at $3.50, $3.75 and $4.50, respectively, they can be purchased separately or packaged with perfume flacons or refillable purse spray containers. Filling is by Aero-Chem Fillers and valve actuators are supplied by V. C. A., Inc., both of Bridgeport, Conn.

"Cremey 8" and "Golden Hi-Lather" shampoos from Realistic Co., Cincinnati, are now available in 16 ounce plastic bottles supplied by Plax Corp., Hartford, Conn. Each bottle, fitted with a plastic dispensing closure, makes one gallon when diluted. The new, smaller size is convenient for shop handling and storage. "Cremey 8" is a neutral, non-stripping creme formula, and "Golden Hi-Lather" is a clear, lather shampoo. Both are available in "Unitane" gallons which make eight gallons each, when diluted.

Marcel Rochas Perfumes, Inc., New York, is marketing a new perfume atomizer holding 3½ drams of "Femme" or "Madame Rochas" fragrance. Complete set retails for $10, with refills available at $7.50 each. The brass dispenser is imprinted with the "Madame Rochas" motif, shown, or with a black and white lace-like pattern for "Femme." Container, including metering valve and spray dome actuator, were supplied by Risdon Manufacturing Co., Naugatuck, Conn.

"Instant Spray Starch," and "Window Cleaner" recently introduced by Meadows Chemicals, Inc., a division of Zee Chemical Co., Queens Village, N. Y., are packed in 16 ounce aerosol containers from Crown Cork & Seal Co., Philadelphia. The metal color of the can is used as an extra color in the label, without additional cost, and outside tab construction of can is said to prolong shelf life.

"Sight Savers Spray" a fluid silicone from Dow Corning Corp., Midland, Mich., is now packaged in a one half ounce aluminum "Peerasol" container supplied by Peerless Tube Co., Bloomfield, N. J. Product is formulated to clean, polish and protect eyeglass lenses. A metered valve, said to emit up to 300 sprays per unit is supplied by V. C. A., Inc., Bridgeport, Conn. The slim container is lithographed in light blue design over a white base coat. Retail price of the spray unit is $1.25.

"Capri Hair Mist" with silicones, is being marketed by Capri Cosmetics, Inc., Memphis, Tenn., in a refillable purse-size glass pressure bottle, supplied by Owens-Illinois Glass Co., Toledo, O. "Petite" valve is inserted into the valve of the large home size container for a count of three. O-I also supplies the white plastic closures, and Newman-Green, Inc., Addison, Ill., produces the valves.

Christian Dior of New York, Inc., has introduced a 1½ dram purse size refillable perfume spray in three fragrances: "Miss Dior," "Diorama" and "Diorissimo." The uncoated refill bottle is from Wheaton Glass Co., Millville, N. J. Outer case is by Bridgeport Metal Goods and the BI8F metered valve is by V. C. A., Inc., both of Bridgeport, Conn.

Some examples of filling with hydrocarbon propellants at Peterson Filling

PRODUCTS LAUNCHED WITH HYDROCARBON PROPELLANTS

Propel Sales UPWARD Cost Less Per Package Unit

Here at Peterson Filling, we are fully equipped for high-speed filling of pressurized units utilizing hydrocarbons (propane, butane, iso-butane, etc.) as propellants *with consequent savings in your costs per package-unit.*

Ideal for a wide range of products, these propellants are popular for use with starches, polishes, cosmetics, shaving cream, window cleaners, charcoal starters and many others.

We also fill pressurized units using halocarbons, nitrogen, or carbon dioxide and other inert gases. For *all* your filling needs... *including gravity liquid filling*... write, wire or phone...

PETERSON
Filling and Packaging Co.

HEGELER LANE • DANVILLE, ILLINOIS

new trade marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12 (a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany each notice of opposition.

Fesolv—This for concentrated dry laundry sour. Filed Sept. 8, 1960 by Cowles Chemical Co., Cleveland, O. Claims use since March 31, 1960.

Sta-Soft — This for keeping paint, varnish and lacquer filled brushes in a soft condition. Filed Jan. 10, 1961 by Crown Industrial Products Co., Woodstock, Ill. Claims use since Aug. 24, 1960.

76—This for anti-freeze. Filed Jan. 31, 1961 by Union Oil Co. of Calif., Los Angeles. Claims use since Oct. 12, 1960.

Moon Glow—This for deodorizer-germicide and sanitizer for institutional and home use. Filed Feb. 6, 1961 by James Varley & Sons, Inc., St. Louis, Mo. Claims use since Dec. 16, 1960.

Pine Glow—This for ammonia. Filed Feb. 23, 1961 by Linco Products Corp., Chicago. Claims use since Sept. 29, 1958.

Barrier — This for crabgrass killer. Filed Feb. 28, 1961 by L. Teweles Seed Co., Milwaukee, Wis. Claims use since Feb. 6, 1961.

Finish — This for crabgrass killer. Filed Feb. 28, 1961 by L. Teweles Seed Co., Milwaukee, Wis. Claims use since Feb. 6, 1961.

Vano—This for laundry starch in spray form. Filed March 1, 1961 by B. T. Babbitt, Inc., New York. Claims use since Jan. 24, 1961.

Gro-All Stopp—This for herbicide, insecticide and fungicide. Filed March 14, 1961 by Central Chemical Corp., Hagerstown, Md. Claims use since Oct. 25, 1960.

Volume — This for dry herb shampoo. Filed Dec. 6, 1960 by Roger Bertschy, Berne, Switzerland. Claims use since Oct. 14, 1953.

Magic Glass — This for liquid for cleaning glass. Filed Dec. 13, 1960 by Magic Glass Cleaner Co., Racine, Wis. Claims use since Oct. 17, 1957.

Scalp Bracer — This for shampoo and hair conditioner. Filed Feb. 15, 1961 by Mennen Co., Morristown, N. J. Claims use since Jan. 27, 1961.

Hartz Mountain—This for pet accessories—namely, soaps and shampoos for animal pets. Filed April 18, 1961 by Hartz Mountain Products Corp., New York. Claims use since April 14, 1952.

Pan-L-Life — This for rust inhibitor spray. Filed May 9, 1960 by Rockwell Specialties Co., Dearborn, Mich. Claims use since May 1, 1960.

Neulin—This for all-purpose or dry laundry sour. Filed Sept. 8, 1960 by Cowles Chemical Co., Cleveland, O. Claims use since March 31, 1960.

Visa-Tret—This for germicidal treatment composition for dust mops, dusters and dust cloths. Filed Feb. 3, 1961 by Rubon, Inc., Independence, Mo. Claims use since Nov. 4, 1959.

Glamorene — This for instant spray starch for ironing purposes. Filed April 17, 1961 by Jerclaydon, Inc., Clifton, N. J. Claims use since Feb. 12, 1961.

Action—This for bleach. Filed April 25, 1961 by Colgate-Palmolive Co., New York. Claims use since Jan. 23, 1961.

Bolaris—This for bowl cleanser in liquid form. Filed Sept. 26, 1960 by Barbeau Supply Co., St. Paul, Minn. Claims use since June 2, 1954.

Captured Body—This for hair shampoo. Filed Oct. 18, 1960 by Procter & Gamble Co., Cincinnati. Claims use since Sept. 8, 1960.

Shampies—This for hair shampoo. Filed Oct. 25, 1960 by Lindy Products, Boston. Claims use since Sept. 15, 1960.

Boot — This for spray spotter for cleaning fabrics. Filed March 15, 1961 by Baxter Laboratories, Inc., Morton Grove, Ill. Claims use since Oct. 6, 1960.

Yosemite — This for detergent compositions for industrial and institutional cleaning purposes. Filed March 15, 1961 by Yosemite Chemical Co., San Francisco. Claims use since January 1950.

CalClean — This for detergent composition for cleaning surfaces soiled with greasy dust and dirt. Filed March 16, 1961 by Hagan Chemicals & Controls, Inc., Pittsburgh, Pa. Claims use since Feb. 15, 1961.

Staphiz — This for bactericide. Filed June 22, 1960 by General Chemical Corp., Washington, D. C. Claims use since May 26, 1960.

Walnut Grove—This for chemical preparations used as insecticides, germicides and disinfectants. Filed Oct. 31, 1960 by Walnut Grove Products Co., Atlantic, Iowa. Claims use since May 28, 1920.

Beam—This for cleaning compounds and preparations for farm and dairy equipment, kitchen utensils and dishes, glassware, walls and floors, tile and automobiles. Filed Nov. 5, 1959 by Beam Chemical Co., Oconto Falls, Wis. Claims use since June 1, 1946.

Johnson's — This for cleaners for use on hard, resilient and soft surfaces, in the home and in commercial, institutional and industrial establishments. Filed Jan. 5, 1960 by S. C. Johnson & Son, Inc., Racine, Wis. Claims use since 1915.

Wypit — This for general all purpose cleaner. Filed July 5, 1960 by Wypit Co., Burbank, Calif. Claims use since July 1959.

Keglite — This for oil-type cleaning and polishing dressing for bowling lanes and the like. Filed Nov. 14, 1960 by Pierce & Stevens Chemical Corp., Buffalo, N. Y. Claims use since Oct. 26, 1960.

Bugonex—This for insecticide. Filed Aug. 4, 1960 by Hydroponic Chemical Co., Copley, O. Claims use since July 12, 1960.

Bon Ami — This for polishing waxes and polishes. Filed April 10, 1961 by Bon Ami Co., New York. Claims use since March 16, 1961.

Skidoo — This for insecticide and insect repellent. Filed Sept. 15, 1960 by American-Marietta Co., Chicago. Claims use since Aug. 3, 1959.

Thorochem — This for spray type disinfectant for control of bacteria, fungi and odors caused by such organisms in horse stalls and stables. Filed Nov. 12, 1959 by K.P.B., Inc., New York. Claims use since Aug. 3, 1959.

Certi-Foam—This for dry and wet cleaning compounds for use on rugs, carpets, upholstery and textiles. Filed Sept. 20, 1960 by Certified Chemical and Equipment Co., Cleveland, O. Claims use since 1930.

Certi-Lave — This for dry and wet cleaning compounds for use on rugs, carpets, upholstery and textiles. Filed Sept. 20, 1960 by Certified Chemical and Equipment Co., Cleveland, O. Claims use since 1930.

Rug-It "L"—This for dry and wet cleaning compounds for use on rugs, carpets, upholstery and textiles. Filed Sept. 20, 1960 by Certified Chemical and Equipment Co., Cleveland, O. Claims use since 1940.

Gray-Gone — This for laundry soap. Filed Oct. 24, 1960 by Midwest Chemical Co., Detroit. Claims use since July 20, 1949.

Mid-Dry — This for industrial and institutional cleaning preparations. Filed Dec. 27, 1960 by Midland Laboratories, Dubuque, Iowa. Claims use since Aug. 24, 1960.

Shamrock—This for shampoo. Filed Dec. 29, 1960 by James V. Freeman, Inc., Jacksonville, Fla. Claims use since Sept. 1, 1960.

Malibu Amber—This for shampoo concentrate. Filed Jan. 30, 1961 by Malibu Producets Co., La Mirada, Calif. Claims use since Oct. 11, 1960.

Genie Suds — This for sudsing cleaner, cleanser and detergent. Filed Feb. 9, 1961 by Colgate-Palmolive Co., New York. Claims use since 1954.

Go-Jo — This for cream type hand cleaner, lotion type skin cleaner and liquid protective skin coater. Filed March 7, 1961 by Gojer, Inc., Akron, O. Claims use since Dec. 1, 1949.

Away — This for bleaching cleanser. Filed March 16, 1961 by Acme Chemical Co., Milwaukee, Wis. Claims use since March 9, 1961.

Hetraphene—This for surgical soap. Filed May 15, 1961 by Columbia Wax Co., Glendale, Calif. Claims use since April 21, 1961.

ENJOY THE PROFIT-PACKED BENEFITS OF PRESSURIZED-PACKAGED PRODUCTS-WITH FULD BROS.' QUALITY

AEROSOL CUSTOM FILLING SERVICE!

SMALL LOT RUNS OUR SPECIALTY

Now, even if you are a *limited market* distributor, you can send your sales curve "straight up" with Fuld's aerosol custom packaging service. We handle oil and water bases, liquid and foam products of all types . . . insecticides, air fresheners, polishes, bug killers, spot cleaners, deodorants, bactericides, etc. for household, institutional, and industrial use.

Take advantage of our extensive facilities for product development, merchandising research, custom packaging and quality control.

COMPLETE SERVICE FACILITIES

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We will custom blend to your formula specifications or, package our own tested and proved products under your label—or, assist you in developing new products!

• MERCHANDISING RESEARCH

A recognized leader in aerosol packaged sanitation products, Fuld offers valuable merchandising assistance gained from its experience and continuing research.

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Fuld guarantees rigid quality control on all production, regardless of the size of the run . . . the same consistent quality control that has been our policy for over 30 years.

• CUSTOM PACKAGING

A complete selection of smart new containers with built-in sales appeal. And *all*, with your private brand name prominently displayed! All service confidential.

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MASTERPIECES IN METAL CONTAINERS

Chinese Bronze Incense Burner of Han Dynasty—courtesy of The Art Institute of Chicago

new from Clark

Two-piece drawn aluminum cans with compound-sealed ends are excellent containers for many chemical specialty, food, or drug products requiring hermetic sealing. These cans are economical, lightweight and rustproof. They can be coated inside or out. They stack easily for compact storage . . . are available in 18 sizes. Write for information on this latest product of Clark research and development.

2000 years ago a buyer made a decision on a new container for incense. He could have chosen one made of stone or pottery, but like so many people throughout the ages, he selected metal. Today, you have a much wider selection of materials for packaging chemical specialties . . . and metal containers are still your best choice. Clark offers you an unusually wide variety of structures, coatings, finishes, functional closures, attractively lithographed colors, and graphic designs. Clark containers give fine products the protection they require—the distinctive quality image they deserve. Whatever your packaging needs, come to Clark, where personal service and precision manufacture guarantee satisfaction . . . ***J.L.CLARK***

ROCKFORD, ILLINOIS

how many key executives will be saved?

how many valued clerks will be saved?

how many skilled workers will be saved?

how many experienced secretaries will be saved?

THINK OF CANCER...IN TERMS OF YOUR EMPLOYEES

ONE IN FOUR OF YOUR EMPLOYEES WILL DEVELOP CANCER at some time in their lives, according to latest estimates. Far worse, many of them may die *needlessly* unless they know how to guard themselves against cancer.

For example, too few men and women realize that colon and rectal cancers can be detected at such an early stage that three out of four patients *could* be saved.

Too few women realize that uterine cancer can be detected at such an early stage that nearly 100% *could* be cured.

In fact, too few Americans realize that these and many other types of cancer can be detected at early, curable stages in the course of a thorough health checkup.

Whether you have a few or many employees, call or write to your Unit of the American Cancer Society for information about a free employee education program, geared to your particular factory or office.

AMERICAN CANCER SOCIETY®

Here's the proven producer in the aerosol valve field. You can use Newman-Green valves to help your paint sales grow faster and bloom into bigger profits. And, you benefit at the factory as well as the counter. Newman-Green valves pressure-fill faster, operate more dependably, give even spray patterns with all types of paints.

Spray tips are interchangeable in seconds. Exacting step-by-step quality control manufacturing guarantees you trouble-free filling operations and eliminates the necessity of your own line testing.

Call your nearby Newman-Green representative with your order today.

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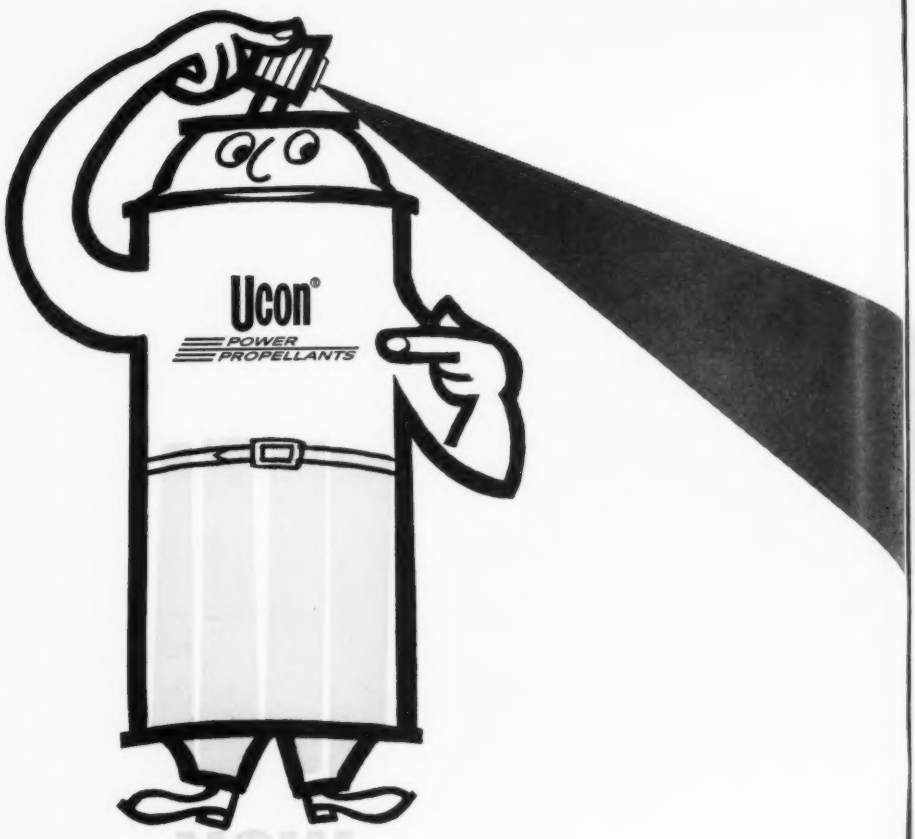
KIngswood 3-6500



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UCON® Power Propellants: Fluorocarbons 11, 12, 22, 113, 114; Propane; Isobutane; Nitrogen; Specialty Blends for specific applications.

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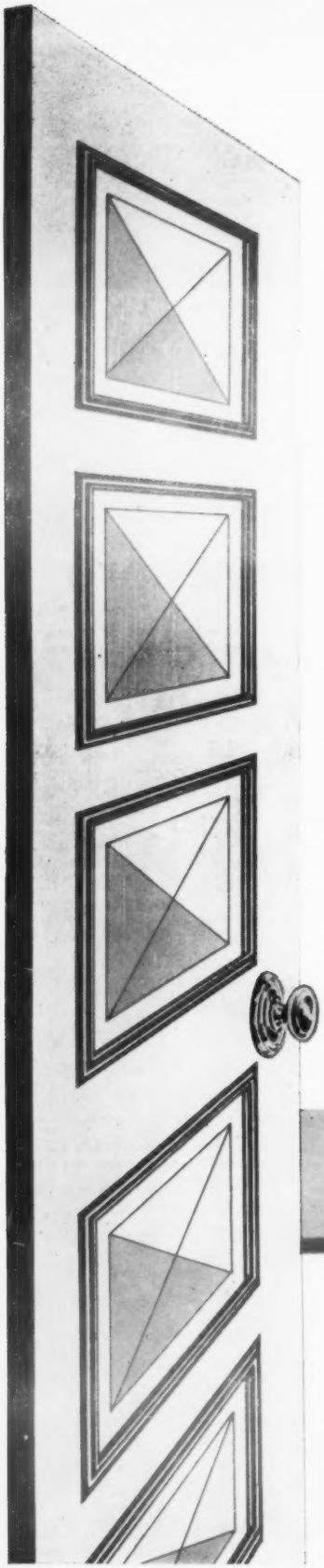
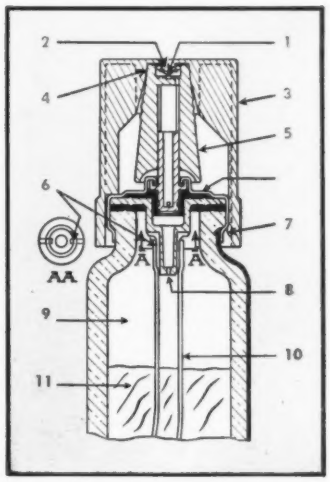


Risdon Research opens another door to new aerosol products

THE RISDON SEAL DOME SYSTEM*

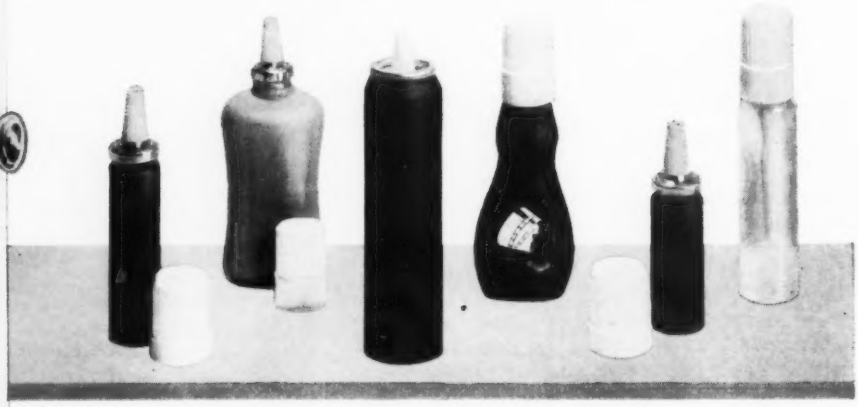
For anti-perspirants containing aluminum salts and for other formulations containing elements which clog valve orifices.



1—Spray Orifice. 2—SEALING PROJECTION securely "corks" the spray orifice to prevent clogging due to drying out of aluminum salts. 3—Protective Dome. 4—Sealing Surface. 5—"Micro Mist"® Actuator. 6—Vapor Channel. 7—Retaining Nib. 8—Vapor-Liquid Mixing and Exit Orifice. "Vapor-Mix" produces finer, less "chilling" spray. 9—Vapor. 10—Dip Tube. 11—Liquid.

COMPLETELY NONMETALLIC VALVE — For 20mm glass, aluminum, stainless steel and plastic containers. Also available in 1" metal mounting cup.

*Covered by Patents and Patents Pending



This is another example of Risdon's ability to produce successful solutions to present and future aerosol packaging problems. *For further information, contact Risdon.*

RISDON

THE RISDON MANUFACTURING CO.
Aerosol Division • Naugatuck, Conn.
Aerosol Valves • Complete Aerosol and Cosmetic Containers

RI-138

pressure packaging

ATI Names Benjamin

David Benjamin was recently appointed vice-president in charge of manufacturing for Aerosol Techniques, Inc., Bridgeport, Conn. Associated with the firm since 1957, Mr. Benjamin was director of purchasing and assistant to the president prior to his appointment as vice-president in charge of planning and engineering.

David Benjamin

—★—

Plasti-Kote Opens Plant

Plasti-Kote, Inc., Cleveland, O., recently opened at Medina, O., a one million dollar plant for producing pressure packaged paint. Claimed to be the world's largest, the plant has over 100,000 square feet of manufacturing, laboratory and warehouse space, and an additional 5,000 square feet of administrative and executive offices.

An eventual production capacity of 50 million cans of spray paint a year, for the plant, was predicted by Elias Shapiro, firm executive vice-president, at opening day ceremonies. It was also estimated that annual company sales, within the next few years, will reach $20 million.

Other features of the plant include: a railroad siding, seven truck docks, and improved production line equipment, fireproofing, lighting and safety equipment.

—★—

Pace, Inc. Expands

Pace, Inc., Wilmington, Del., private label and contract aerosol packager, recently announced the acquisition of a 3,000 square foot building adjoining its present plant. The acquisition marks the third expansion for the firm in the past two years and permits the installation of more filling lines and provides additional warehouse space. The new telephone number is East 8-5616.

—★—

New AMCO Aerosol Line

A new, low cost automatic aerosol production line, designed by Aerosol Machinery Co., Waterbury, L. I., can be used for pilot runs as well as intermediate and quantity production, the company states.

The new line, which can be installed as a straight line or "U" shape, can load up to 90 cans per minute in continuous operation, it is reported. All stations are easily accessible for service or repair, and rapid cleanup and changeover from one product or propellant to another.

Roberts to Virginia Chem.

Frederick E. Roberts was recently named aerosol sales representative in the middle Atlantic states for Virginia Chemicals & Smelting Co., West Norfolk, Va.

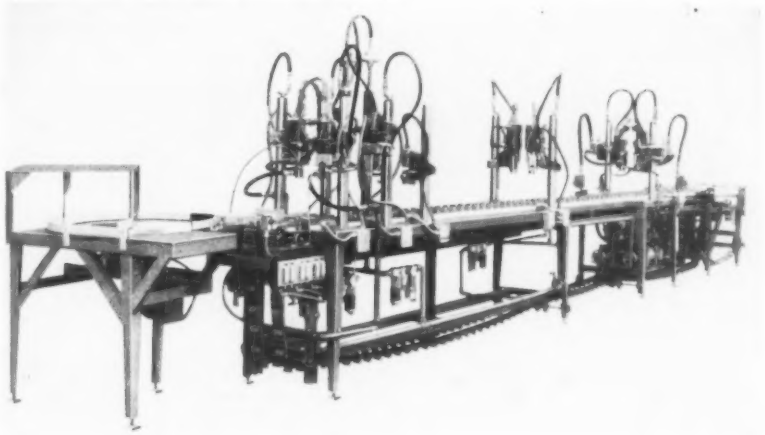
Frederick E. Roberts

Mr. Roberts was associated with the Royal Lace Paper Division of Standard Packaging, Inc., New York, prior to joining Virginia Chemicals.

Operated from a single master control panel, cans are fed, cleaned, filled, purged, crimped, injected with propellant, check-

(*Turn to Page* 213)

New, low cost automatic aerosol production line, designed by Aerosol Machinery Co., Westbury, L. I. Unit shown is a double-chain model with explosion proof features and control panel remotely located.



Newest attraction in the Canco family

All eyes are on this spectacular new pressure can. And no wonder! At 24-oz. capacity this large economy-size can literally stands head and shoulders above the entire pressure can field. It adds tremendous scope to a line that already features a wide variety of sizes. Now, with a 3-oz. to 24-oz. capacity range, Canco offers the right container for virtually any product need. All six sizes are available with standard one-inch cup openings and all carry the Canco end-use warranty. So, when you want to put the pressure on for bigger sales, call on Canco. A wealth of pressure can experience is at your service.

CANCO Division

AMERICAN CAN COMPANY

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Aerosol Valves—Past, Present, Future

By Joseph J. Gregory*,
Newman-Green, Inc.
Addison, Ill.

IF one were to ask aerosol loaders or marketers when the first dispensing valve for a so-called low pressure system was developed, few, if any, would guess correctly—within 20 years of the date the first patent was issued for such a device.

It was in 1901 that Dr. Gebauer was awarded a patent for a "Receptacle and Container for Administering Volatile Liquids." Ethyl chloride and other volatile liquids were held in a container equipped with a simple needle valve, which opened into an intermediate chamber, which in turn had a delivery nozzle. The following year, Gebauer obtained another patent for a similar device which delivered either a spray or a stream. Since these patents were issued, many similar devices have been patented for all types of dispensing mechanisms for pressurized products.

In 1933, Eric Rotheim was granted a patent on a valve design which permitted the concentrate, together with a condensable gas dissolved therein, to expand totally or in part on its way to the discharge opening. However, in the presence of insecticides, the expansion of the liquified gases within the valve body was found to cause some undesirable phenomena. To dispense insecticides in the desired spray pattern and particle size, existing designs had to be further modified. W. N. Sullivan and L. D. Goodhue of the U. S. Department of Agriculture made the necessary changes and produced the first high pressure insecticide package. Their aerosol became standard equipment for the U. S. Armed Forces in 1943.

Incidentally, Dr. Goodhue

had a very difficult time trying to convince supply officers of the various military services that such a product would be extremely useful. So convinced was he of the true merit of his invention that he resigned from U. S. D. A. and — with several other men — formed Airosol, Inc., Neodesha, Kans. This firm as well as several other companies undertook the task of supplying the U. S. government with high pressure insecticide bombs for use by the military.

Post-War Developments

When World War II had ended, the potential consumer appeal of the military "bug bomb" was quickly realized by Airosol, Inc.; Regal Chemical Co., Westinghouse Electric & Manufacturing Co., Knapp-Monarch Co., and Bridgeport Brass Co. These firms had the equipment to make and fill the high pressure bombs and now directed their efforts toward development of the peace time consumer market. Shortly thereafter, the first aerosol insecticide was introduced to the consuming public. Valves had been modified to permit regulation of the dispensing mechanism to spray as little or as much of the insecticide as required. Knapp-Monarch featured even a convenient push button lever operated valve.

While the high pressure package was originally designed for insecticides, some companies used it for marketing other products, such as room deodorants and cold remedy formulations. However, the high cost of the package seriously hampered the growth of the market and, although the products were highly efficient, the total volume of sales never amounted to very much.

Low Pressure Units

At about the time when high pressure units became available to the consumer, project engineers at Continental Can Co. and Crown Cork & Seal Co. were investigating the possibilities of manufacturing a container suitable for low pressure aerosol products. Crown was equipped to manufacture drawn containers, which were being sold to the beer industry. With a few changes, existing equipment could be used to make low pressure aerosol containers.

One of Dr. Goodhue's associates at Airosol, Inc., Clifford Greenwood, designed a pressure valve and in 1946 applied for a patent to cover it. Utilizing Crown Can's shell container with some modifications required to make it suitable for attaching Mr. Greenwood's valve, Airosol, Inc., marketed the first low pressure aerosol package under the name of "Jet" power insect killer. This departure marked the beginning of low pressure and intermediate pressure aerosols.

For Continental Can Co., the change or adaptation of existing

* Paper presented at fourth annual meeting, Canadian Manufacturers of Chemical Specialties Assn., Toronto, Oct. 31, 1961.

1,000,000,000*

*The above figure represents existing facilities for world-wide annual production

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CONTAINERS LIMITED
265-275 Franklin Street
Melbourne

BRAZIL
Att: Mr. Helmuth Schiedlich
METALURGICA MATARAZZO S.A.
Rua C. Pinto 575
Sao Paulo

FRANCE
Att: Mr. Denis Jacob
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Paris, 16 eme

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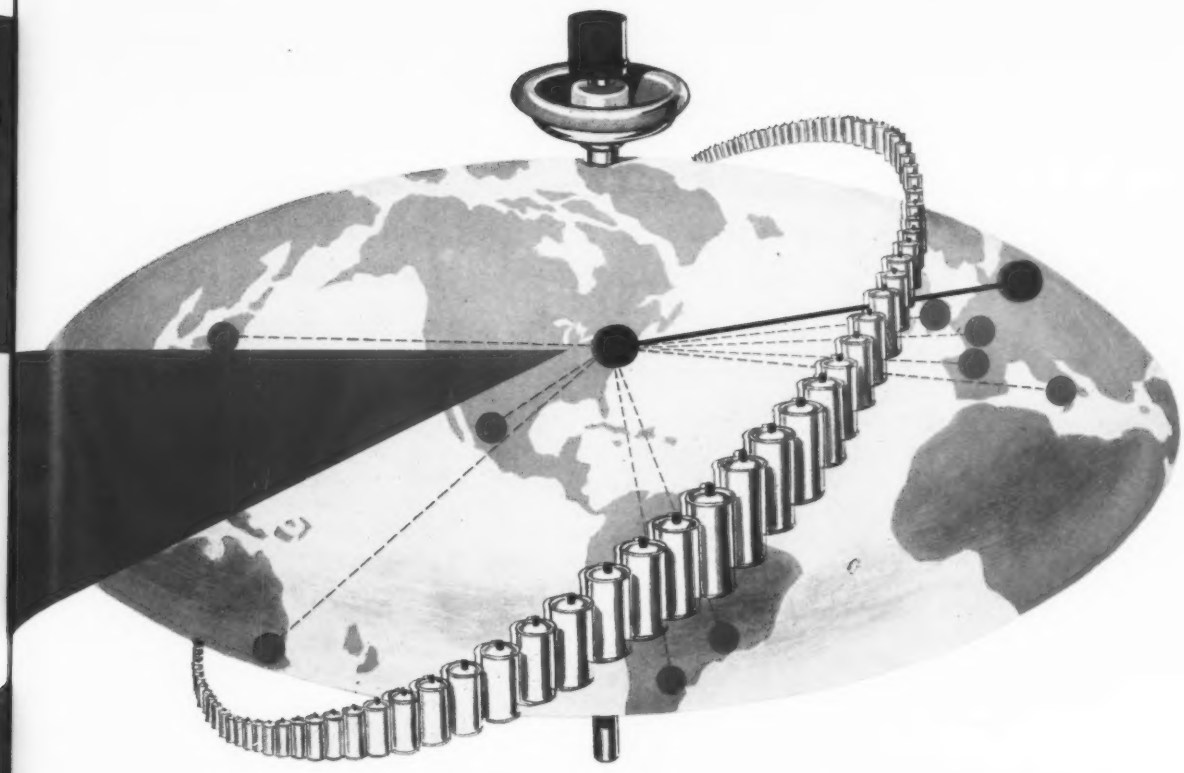
Att: Count Nuncio Scribani-Rossi
BOMBRINI, PARODI-DELFINO
Via Lombardi 31, Rome

JAPAN
Att: Mr. Taisho Ikeya
TOYO AEROSOL INDUSTRY CO., LTD.
43-2 Haramachi
Ota-Ku, Tokyo

MEXICO
Att: Mr. Fernando Castillo
ENVASES GENERALES CONTINENTAL DE MEXICO
Av. Oriente 107 #114 Col. Bondojito
Mexico 14, D.F.

SPAIN
Att: Dr. Pedro Junyent
INDUSTRIAL IBERICA QUIMICO FARMACEUTICA S.A.
Loreto 8
Barcelona 15

UNITED KINGDOM
Att: Mr. H. Robin Hearn
THE METAL BOX COMPANY LTD.
37 Baker Street
London, W1, England



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Att: Mr. B. Harup-Hansen
B. Harup-Hansen—Emballageagenturet
Stadfeldtsvej 28
Copenhagen-Valby

FINLAND
Att: Mr. L. Timgren
H. Bergenheim & Co.
Rahapajankatu 1
Helsinki 1

GREECE
Att: Mr. N. Athanassiadis
Agricultural & Technical Enterprises
19 Edward Law Street
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NEW ZEALAND
Att: Mr. W. H. Huthnance
W. H. Huthnance & Co.
R. S. A. Bldg., Dudley St.
Lower Hutt City

SWEDEN
Att: Mr. C. G. Wollin
Kemiflor AB
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equipment was not quite as easy as it had been for Crown. In order to justify the expense for a new can manufacturing installation, the volume of units produced would have to be substantial, and some idea of the prospects of such a package would have to be determined.

Continental Can faced the additional problem of locating a suitable valve or dispensing unit for its package. All of the known sources of such mechanisms were contacted, including manufactures of automobile tire valves. Many different types of dispensing heads adaptable to these tire valves were made. Although tests showed particle size and efficiency of formulation to be satisfactory, the materials used in the valves would not withstand the solvent action of the insecticides. However, the high cost problem would still have remained unsolved, even if suitable materials for valve parts had been available. Samples of valves were submitted by many other manufacturers of specialty products but Continental found none satisfactory. Finally, Continental's own research and engineering departments pooled their efforts and came up with a valve which was found suitable to be marketed on the firm's low pressure aerosol dispenser.

Not until many months later, did Continental Can finally solve most of its production problems and was able to offer a can and valve unit to parties interested in the new packaging form. This was the first time that any company offered a container and valve unit to all industrial consumers.

We shall briefly digress to review the situation prevailing when aerosol valves first became available to the loader:

1. Although valves were being made by several manufacturers in the late 'Forties, they could be bought only from Continental Can. All other valves were being made for captive use, exclusively.

2. Valve construction precluded pressure filling and necessitated costly refrigeration equipment.

Valve design, keeping pace with the requirements of the product, seen as essential to all future progress in pressure packaging. Valve maker is key to opening up the fields of food and pharmaceuticals for aerosols.

3. Cost of valve and can were two and one half times as high as today. However, this did not really impede the development of aerosols, since it left a substantial margin for research on and development of new valves, products, and package modifications.

4. Due to limitations imposed by the valve, products had to be tailored for aerosol packaging. Viscosity and propellant-to-product ratio had to be closely controlled, or else the spray pattern might be seriously affected. Products had to withstand sub-zero temperatures without precipitation or "drop out" of any of the ingredients. This eliminated all water based products as candidates for aerosol packing.

5. Due to limitations imposed by container construction all packages looked similar, offering no opportunity for distinctive package design.

6. Only products intended as space sprays or coatings were considered for pressure packaging.

Emergence of Mounting Cup

Consumer interest in aerosols grew with each passing year as did the interest of several forward-looking firms who envisioned this infant becoming a giant in the span of a few years.

In the early 1950's several firms were formed expressly as manufacturers of aerosol valves. A number of these companies manufactured valves for the standard "beer can" type of container. Others realized the possibilities offered by the use of a one inch mounting cup as a means for attaching the valve to the can.

The first valve mounted on what we consider a standard one inch cup was invented in 1952 by two engineers at Bridgeport Brass Co. — N. O. Lowen and J. T. Efford. Like Airosol, Inc., Bridgeport Brass also manufactured these valves exclusively for captive use on products marketed under the Bridgeport label or under that of Bridgeport's private label customers.

Although the first valves mounted on the one inch cup were actually designed for space sprays, their potential usefulness for other products was soon recognized. The possibility of pressure filling through these valves received attention. Coating of containers with corrosion resistant enamels became standard practice. The interest of package designers was further aroused by original packages featuring unusual caps and spray heads. Aerosols were well on the way to becoming a major factor in the packaging field.

The growth of the aerosol market in 1951, '52, and '53 prompted Continental Can to discontinue in 1953 its valve manufacturing activities and to concentrate on improving design and construction of its containers. Stiff competition in the valve field doubtless contributed to this decision.

New Products and Trends

To understand the growth of aerosol sales in the last 10 years, one needs only to recall that the total number of aerosols packaged in the United States in 1951

amounted to approximately 34 million units. Of this total, insecticides accounted for 50 per cent, room deodorants for 25 per cent. Hair sprays, shaving lathers, medicinals, pharmaceuticals, colognes, perfumes, and other personal products made up only six per cent of the total. However, although the personal products constituted only a small part of the overall aerosol market, they represented a trend toward new products and new packages.

Additional products brought new demands on both the design and function of aerosol valves. A glass container for aerosols was introduced and, naturally, required a valve of different construction and style. Water based products emerged which called for valve parts made of corrosion resistant materials. New coating materials for mounting cups had be tested.

A number of changes in valve design were made to facilitate pressure filling, pressurized shaving cream started its rapid rise toward a place among top volume items on the aerosol list. Novel spray buttons were designed to permit greater variation and selection in orifice dimensions. A "chain reaction" had been started: New products appeared in pressurized form as a result of improvements in valve design and construction. Due to these novel valve features additional products were lending themselves to pressurized packaging. Some of these new packages could be improved by further minor changes in the valves. In making these adjustments, valve manufacturers discovered additional possibilities of further expanding the range of candidates for aerosols.

The multitude of changes made in aerosol valves since their commercial debut would be hard to list. Among aerosols now available due to these changes in valve designs are pharmaceuticals in measured dosages, vitamins in drop form, perfume in metered quantities, all types of surface coatings; talcum or antibiotic powders, meat tenderizers, salad seasonings and dressings. Many cosmetic items, such as hair dressings, hair sprays, hand lotions, and colognes have become leaders in the aerosol field, and all of these items require special valves, whether packaged in glass or metal.

New Propellants

The potential range of food items in pressurized form is growing every month. Recent FDA approval of propellant C-318 for food use has lent additional momentum to this new field.

Use of compressed gases, either individually, blended, or in conjunction with a propellant of the halo-carbon family, has renewed interest in products once tried but abandoned because of poor results obtained with propellants available at the time. Aerosol polishes are among the many new versions of old products currently being investigated for use with compressed gases or other propellant systems. Formerly, all polishes were solvent based formulations, while many of them are now formulated from a water base.

Similarly, insecticides used to be in a kerosene type base, whereas water based insecticide formulations are now being developed. The U. S. Department of Agriculture has reportedly approved a number of such products.

Room deodorants are now being packaged in water solutions. This change eliminates the staining problem which formerly plagued formulators of such products.

New Formulations

What have these recent changes in basic formulations done to valve requirements? First, a system based on a mechanical break up principle had to be incorporated into the spray heads. The mechanism had to fit into spray heads of standard size in order to minimize changes in equipment.

New construction materials for spray heads and valve bodies were needed. Most basic requirement was that these materials should not absorb moisture, which would soften them and produce changes in spray pattern and spray characteristics.

Different coatings had to be developed to minimize corrosion of the mounting cup. Tubing was adapted to product requirements: small diameter tubing was used to restrict the flow of certain materials; large diameter tubing to deliver sizable volumes of heavy products such as toothpaste.

Future Outlook

New products are being considered for pressure packaging, placing ever greater demands upon the valve manufacturer's ingenuity. New horizons in the aerosol field appear to be unlimited. What part will the valve manufacturer play in the future growth of aerosols? His will be a key role in opening up the pharmaceutical and food fields. Valves and dispensing heads have heretofore imposed such limitations that several outstanding candidates in the food and drug fields have failed to make the grade, as yet.

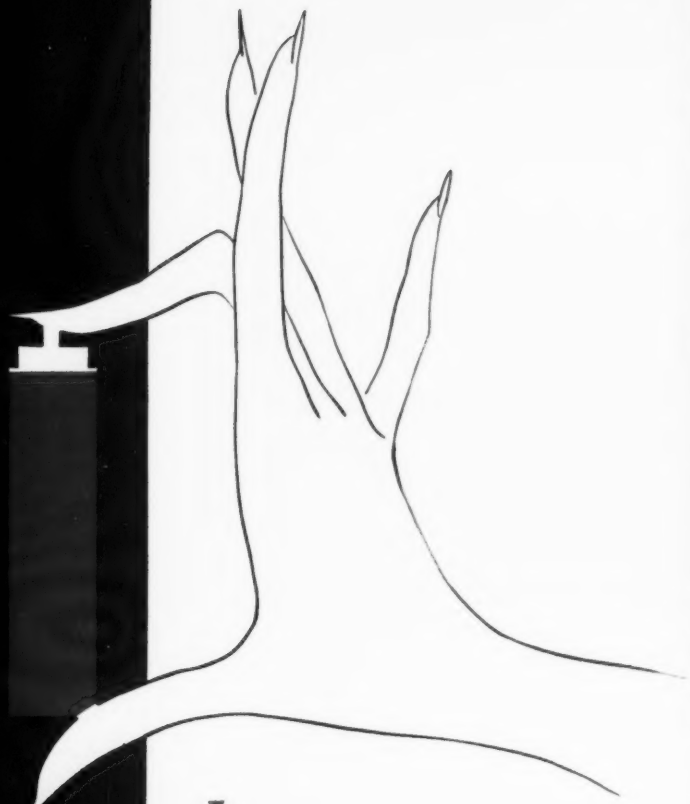
Closer cooperation between representatives of the food and drug industries and valve manufacturers will yield answers to many problems which are currently impeding the progress of aerosols in these virtually untapped markets.

Great variety of products and applications in these industries will doubtless require many different new valve designs. Certain items will call for highly specialized valves.

Owing to the close price structure of the food industry and the budget consciousness of the housewife a very low priced valve is needed which adds a minimum to the price of the individual unit.

Valve design keeping pace with product requirements is doubtless essential to all future progress in pressure packaging. The ideas stimulating these developments may come from the field, from aerosol marketers, loaders, and others. Faced with a need, the valve designer will come up with the answer.■

Good things come in small aerosol packages



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Ward Isotron Manager

E. Smedley Ward, Jr., was recently named New York district manager for the "Isotron" department of Pennsalt Chemicals Corp., Philadelphia. He was formerly sales representative for "Isotron" aerosol prepellants in the New York territory for the past two years. Prior to this, he was in the Ohio territory in the same capacity.

E. Smedley Ward, Jr.

Mr. Ward joined Pennsalt in 1957, after being associated with Gulf Oil Corp. in Philadelphia.

★

Halide Leak Detector

McIntire Co., Livingston, N. J., recently introduced the "Halide Leak Detector," capable, according to the maker, of detecting any leaking refrigerant or other halogenated gases in amounts as small as one-half ounce total per year.

Weighing five ounces, the six and one-half inch unit contains a replaceable butane cartridge. It supplies a light blue flame which is claimed to turn vivid green in the presence of even a trace of any halogenated gas. A rubber hose attached to the detector tube, is used as a probe and feeds the leak to the flame.

By removing the leak detector, the instrument can be used as a blowtorch with a pin point flame reaching 3,500° F. By attaching a soldering iron tip the unit can be used to solder electrical connections and other small joints.

The detector is sold as a complete kit for $8.95, including three butane chargers and all attachments. Butane cartridges are available at two for 49 cents, with a life of one- half hour each.

"Halide Leak Detector," from McIntire Co., Livingston, N. J., detects leaking refrigerant gases or other halogenated gases in amounts as small as one-half ounce total per year.

★

Tube Manifold Names Four

Tube Manifold Corp., North Tonawanda, N. Y., recently announced the following appointments: R. A. Creveling, treasurer; David Ireland, general sales manager; Richard Hutt, chief engineer; and Chester Haber, plant superintendent.

Mr. Creveling had been assistant treasurer of the company since 1959, and Mr. Ireland, prior to his appointment, was vice-president of Wolverine Bolt Co., Detroit. Mr. Hutt has been with Tube Manifold for five years as quality control supervisor, and Mr. Haber was formerly general plant foreman for three years.

R. A. Creveling

David Ireland

New Aerosol Line

(*From Page* 205)

weighed and coded, with accuracy and reliability. The design incorporates a special multi-station adjustable can timer that controls the sequence of each production operation.

Additional features of the AMCO line are: individual control time cycle for each station; spring loaded heads, easily adjustable for different heights; safety switch at each station and contact surfaces of stainless steel.

★

Aerosol Moisture Test

"Moisture Determination Method for Pressurized Aerosol Packages of Hygroscopic Components," a paper by Philip Kleppe Jr., Ronald James and Harvey Mintzer, appears in a recent issue

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of *ATI Pressure Gauge*, a newsletter published by Aerosol Techniques, Inc., Bridgeport, Conn.

Described is an adaptation of the standard Karl Fischer titration to apparatus permitting a more completely anhydrous system than conventional titrimeters. Visual evaluation of endpoints is replaced by potentiometric (conductivity) means.

The method and instrumentation described is said to be practical for large or small scale loading.

Aerosols — Woman's View

(*From Page* 72)

costs seven times more than liquid starch, it again is worth the difference because it answers a specific need for still more consumer convenience.

Women find it much more convenient to wash individual loads of clothes several times a week rather than set aside one day as washday. As a result, there may be only a few pieces of laundry which need to be starched. Pressure packaged starch is ready and easy to use and does an excellent job. Many new "miracle" fibers do not need starching and in some households there are fewer pieces to starch and the spray starch offers a special convenience for these homemakers. Spray starch makes it possible to do the single hurry-up job, it does away with the necessity of sorting clothes for starching. And the homemaker can starch as she irons.

When packages are being designed for women, and the aerosol is a specific example, it is essential that women be a part of the plans. Because a woman's hands are smaller and not as strong as a man's the pattern of product usage may be completely altered. A man may pick up an aerosol container with one hand and press the valve by using the side of his forefinger. A woman may steady the can with her left hand because she is more accustomed to using both of her hands in most household chores. She is much more likely to press the valve straight down, using the cushion of her forefinger, rather than pressing from the side. The length of her finger nails is still another important factor that makes a woman use her hands differently from men. A woman has a natural and understandable liking for long finger nails. Once she succeeds in having them, she protects them jealously. She soon learns that she can accomplish many things and fully protect her elegant finger nails, as well, by using the cushion rather than the tip of her finger. The big lesson here is simply this: If a package isn't designed for the way a woman will use it, it may not work at all. "Silly!", some men may say, but being attractive is part of a woman's being and from all indications men like it that way.

The do-it-yourself trend has put many paints and allied products into aerosols. It has become so easy to do a paint job with an aerosol that women are just as avid do-it-yourself fans as men. But when a product begins to appeal to women, as well as men, then it becomes necessary to consider women in the label design. When you consider women's reactions to packaging, it becomes apparent that they resist buying two packages of almost anything to do one job — whether it's baked beans, hash or paint. Women feel it is more economical to buy one larger container, instead of two or more smaller packages, and thus cut down on packaging costs. If it's paint, a woman may try to get the job done with one can rather than to buy two cans and have some left over. When she finds one isn't enough she's very annoyed at having to discontinue her work to go and buy that second can. In the case of staple items like soaps and detergents, window cleaners, furniture and floor waxes, insect repellents, moth proofers, etc., she likes to buy the larger package, not only because it may be cheaper, but also because she won't have to put it on her shopping list as soon again.

In line with this feminine thinking, Canco Division, American Can Company, has recently introduced a new, larger size, aerosol container of 24 ounces. We feel this new size will be especially practical for staple items such as those mentioned above. We also feel it will even put some new items into the staple class which may not have been considered staples heretofore. The industry has produced a number of auxilliary items which also contribute to the greater convenience of aerosols. With a pistol grip handle for example, the painting job will be even easier and cleaner than before. We feel sure women are going to accept this new "giant" can as they have accepted so many other giants before it.

Because the aerosol package is definitely a convenience package,

Schrader Appoints Hecken

Harold P. Hecken was recently named assistant manager of aerosol sales by A. Schrader's Son, division of Scovill Manufacturing Co., Brooklyn. He will assist Gerry Torgerson, aerosol sales manager, at all levels of trade contact with particular attention to aerosol accounts in the mid-west.

Mr. Hecken, associated with Schrader for the past 11 years in various technical and sales positions, was formerly special representative in the mid-west for the aerosol division.

Harold P. Hecken

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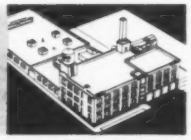

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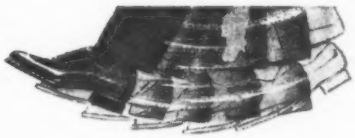

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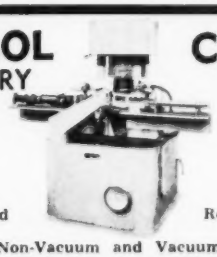

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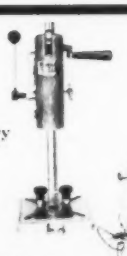

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Aerosols—Woman's Point of View

(*Continued from Page* 216)

the consumer expects nothing less than complete convenience from it. One of the most common "gripes" we hear is that some valves have nothing to indicate the direction of the spray. This is particularly annoying when the user sprays herself! A readily recognizable arrow or just a colored dot would be a great advantage toward insuring more convenient usage of the aerosol package.

It is important to remember, too, that with products such as pressure packaged spray starch or moth proofers the user may be pressing the valve for rather extended periods of time. A smooth button, slightly larger than the present button, contoured to fit the finger would allow for more comfortable use of the container. There are, we realize, limitations as to how large the button can be, but a button only fractionally larger would be a vast improvement.

The more nearly we approach 100% efficiency of aerosols, the more completely sold the homemaker becomes. Package failure must be kept to the absolute minimum! This one failure in a hundred costs her money and she remembers it far longer than the other 99 that give her such great convenience. No amount of care in manufacture can be too great if it will cut down faulty operation of the final package.

Until now, I've said very little about food in aerosols. However, the success of aerosol toppings has certainly proved beyond a doubt the worth of pressure packaging food. I did mention earlier that an aerosol if it is to be the right container for any product must offer a service not available in any other container. Considering the topping field, the aerosol certainly offers a great convenience in comparison with the necessity of preparing other toppings that might be used in their place. The many other product advantages mean plus sales and should be featured on the can or in advertising. For example, the single application is so easy, their use by teenagers for "building" ice cream sundaes is practical because it's fun and possible for teenagers who are seldom accomplished cooks. The makeup of the product is such that it can be kept out of refrigeration for a time which would make it practical for backyard or picnic use. The use that makes your product stand out from the crowd may be the thing that sells your product ahead of the crowd.

Convenience is a magic word to American homemakers. It is important enough to command a premium price, but a convenience to a woman is something that only a woman can evaluate. Why not include a woman in your future product plans? Perhaps, Canco's hard working staff of home

New pressure packaged fragrances, left to right: "Golden Accent Mist" of Fuller Brush Co., Hartford, Conn.; Helena Rubinstein's "Vis a Vis," and "Crystal Glory" by Avon Products, Inc., New York: "Golden Accent" is packaged in uncoated glass bottle encased in aluminum shell, and features all plastic trigger tip which eliminates need for overcap. Two ounce bottle is equipped with VCA "B18F" metered valve.
"Vis a Vis" comes in uncoated, one-half ounce bottle by Foster Forbes, Marion, Ind. One-quarter ounce perfume spray retails for $2.50. "Vis a Vis" lines also include Eau de Perfum and Eau de Parfum Mist. Valve is by VCA, Inc., Bridgeport.

"Crystal Glory" is packaged in one ounce coated bottle by Wheaton. Outer shell is by Carr Lowery of Baltimore and Metal Fabrications of Waterbury, Conn. Button and metered valve with molded dip tube are by VCA, Inc., Bridgeport, Conn.

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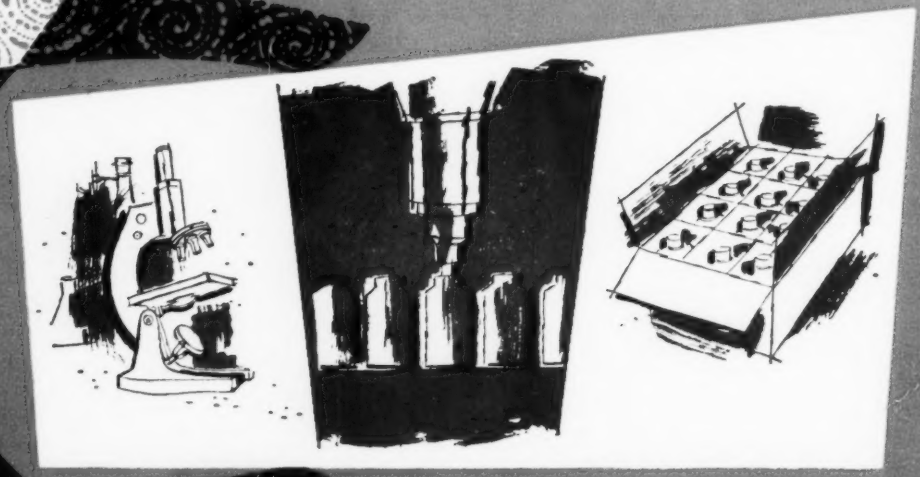

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economists may be of help – convenience as it applies to the successful marketing of all food and home products, is a word and packaging concept they know intimately.

—★—

Six Ounce Spray Finishes

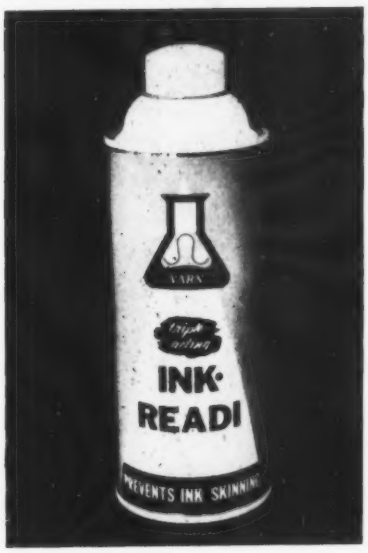
Sapolin Paints, Inc., New York, recently introduced four of its "U-Spray-It" coatings in a six ounce pressure package, to retail for 98 cents each. The new size augments the firm's regular 16 ounce line. The finishes available in the new, compact size are "Glass Frosting," "Appliance White," "Gold Leaf Effect" and "Chromium Effect."

—★—

Krylon Stock Offered

Krylon, Inc., Norristown, Pa., recently filed a registration statement with the Securities and Exchange Commission covering a proposed sale of 250,000 shares of common stock. The shares are being sold by stockholders and the company will receive none of the proceeds.

"Ink-Readi", new pressure packaged compound to prevent printing inks from skinning, was announced recently by Varn Products Co., Flushing, N.Y. Packaged in 16 ounce spray can, product is sprayed on rollers, ink plate and ink fountain of printing press at down time and over night. It may also be applied to surface of printing ink, or on inside lining of can prior to filling, and on edge of rollers to prevent glaze, friction and cracking.



"Nitrous C-318" Bulletin

Ohio Chemical & Surgical Equipment Co., Madison, Wis., a division of Air Reduction Co., New York, has just released a six page bulletin on its new foam propellant "Nitrous C-318." A blend of nitrous oxide and "Freon" C-318, produced by E. I. du Pont de Nemours & Co., Wilmington, Del., the pressure producing agent is said to provide foamed foods with a firm texture and consistency that stands up for hours; constant overrun during entire use of the dispenser; and excellent color retention.

The folder outlines the physical properties of "Nitrous C-318" and describes consumer and producer advantages to be gained by its use. Tables are included indicating the product's stability and overrun. Copies of the bulletin are available by writing to Ohio Chemical, 1400 E. Washington Ave., Madison, Wis.

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TAMPER PROOF VALVE SEAL*
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- Guards against sampling
- Easily torn off for use
- Cannot be repositioned
- Assures full content
- Is transparent
- Used with conventional cap
- Low in price

*patent pending

√ *The seal Cannot be repositioned*

This new tamper proof seal will assure you and your customers of full content, guard against indiscriminate sampling, prevent premature release of products. The closure is easily torn off for use of the product, *but* after removal, the seal cannot be repositioned.

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FDA REGULATION ACCEPTS "FREON®" C-318

Opens immense new aerosol market for you!

What is Du Pont FREON* C-318?

It's a liquefied gas that's odorless, tasteless, non-toxic and exceptionally stable. Its chemical formula is C_4F_8 (cyclic). It may be used alone or blended with nitrous oxide. Either way, "Freon" C-318 octofluorocyclobutane gives you new, profitable packaging opportunities.

What advantage does it give aerosol foods?

Take whipped cream as an example. Added to the nitrous oxide in the aerosol can, C-318 greatly improves stability and quality of the dispensed cream. Compared with the present aerosol whipped-cream product, here are some improvements you can expect:

- Increased overrun
- Improved stiffness and stability of product
- Better color retention
- Less weeping or drainage
- Finer, more uniform bubble structure

FOOD PROPELLENT

What foods can you load with C-318?

"Freon" C-318 works best with food products of low to moderate viscosity that are to be sprayed or foamed. It's suitable, too, for entirely new uses such as salad dressing, whipped butter, cream cheese and dessert toppings. You'll doubtlessly think of others!

Another development of Du Pont leadership

"Freon" C-318 is the latest in a long line of aerosol achievements in research, production and marketing . . . the kind of industry advancement you've come to expect from Du Pont. For information on "Freon" C-318 or other quality propellents, write: E. I. du Pont de Nemours & Co. (Inc.), "Freon" Products Division, N-2420, Wilmington 98, Delaware.

*Freon is Du Pont's registered trademark for its fluorocarbon propellents.

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Aerosols

SCIENCE AND TECHNOLOGY

edited by **H. R. SHEPHERD**, Aerosol Techniques, Inc.
EDWARD SAGARIN, consulting editor

advisory editors: George W. Fiers, Fred T. Reed, William Knapp, Ray Stetzer

An industry-wide collaboration of nineteen specialists representing leading aerosol producers and suppliers has provided the first truly comprehensive survey of the industrial and technological developments of the pressure packaging industry. In nearly 600 abundantly illustrated pages and 16 chapters, each written by an expert on that topic, all aspects of the modern aerosols industry are covered in detail. Material on the various aspects of manufacturing operations — containers, valves, propellants, lab techniques, formulation design — is followed by discussion of the applications — from cosmetics, foods and pesticides to coatings, industrial and household specialties.

Contents: Aerosols in Modern Industry — Theory and Practice of Aerosols — The Metal Container — Glass and Plastic Containers — Valves — Propellants — Laboratory Techniques — Factors in Formulation Design—The Odor of Aerosol Products—Cosmetics: Fragrance and Personal Hygiene Products — Hair Cosmetics — Pharmaceutical Products — Food Aerosols — Pesticides — Coating Compositions — Household and Industrial Specialties.

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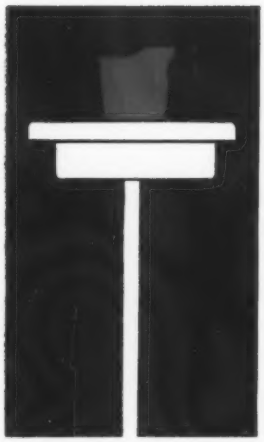

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aerosol patents

No. 3,002,288. Laundry Dryer With Aerosol Container, patented by George D. Conlee, Ripon, Wis., assignor to McGraw-Edison Co., Ripon, Wis. In a dryer having a drying chamber with an inlet opening in one wall the patent covers means for supporting a valved container for pressurized fluids with its outlet positioned to discharge through said opening, a plunger supported in operative relation to the valve of said container, heat operated means including an element operative to expand when heated and to contract when cooled for advancing and retracting said plunger, and means for supplying heat to said element.

No. 3,006,510. Aerosol Cap Construction, patented by Philip H. Sagarin, Bridgeport, Conn., assignor to VCA, Inc., Bridgeport. In an aerosol dispenser, the patent claims a manually operable valve construction carried by a container, said construction including an upwardly extending, accessible and depressible actuating part having a side nozzle; and a fixed cap surrounding said depressible part and having a top wall provided with a recess to provide access thereto, said cap being mounted on the container and having guard portions surrounding said recess which are at least as high as the said depressible part to prevent accidental or inadvertent actuation of the part by contact with a broad-surfaced exterior object, and said cap having a pair of annular and concentric, spaced walls in the form of depending skirts at least one of which engages the container for support of the cap, said walls having aligned openings receiving the side nozzle of the actuating part and the top surfaces of the depressible part and of said top wall constituting substantially continuations of each other and together forming the top surface of the dispenser.

No. 3,008,654. Valve Buttons for Pressurized Dispensers and Dies for Making the Same, patented by Robert Henry Abplanalp, Bronx, and John Richard Focht, Yonkers, N. Y., assignors to Precision Valve Corp., Yonkers. Described is a one piece integral molded button having in its bottom a cavity adapted to snugly receive the free end of a tubular valve stem, a circular chamber molded within the button at one side of the cavity with one side of said chamber opening into the cavity, which open side is adapted to be closed by the valve stem when the latter is in place in the cavity, a passage leading from the end wall at the base of the cavity and merging into the circular chamber substantially tangentially of the latter, and a discharge opening integral with the molding and extending from the circular chamber to the exterior of the button.

No. 3,008,651. Sprayer or Atomizer, patented by Marcel Follain, Courbevoie, assignor to Soc. Technique de Pulverisation (par abbreviation Step), Pantin, France. Described is a sprayer comprising a body adapted for attachment to a container of fluid to be sprayed and defining a stopper for the container and a compression chamber, a spray nozzle opening outwardly from said body and having a first passage for the fluid extending through said stopper to communicate the container with the nozzle and a second passage for compressed gas opening from said chamber adjacent said first passage to entrain the fluid from the latter, first valve means normally closing said first passage, a receptable containing a charge of compressed gas, means for mounting said receptacle for movement relative to said body, means defining an opening between said receptacle and said chamber, second valve means normally closing said opening, valve actuating means movable parallel to the direction of movement of said receptacle and operable in response to said movement to open said first and second valve means so that fluid and compressed gas are

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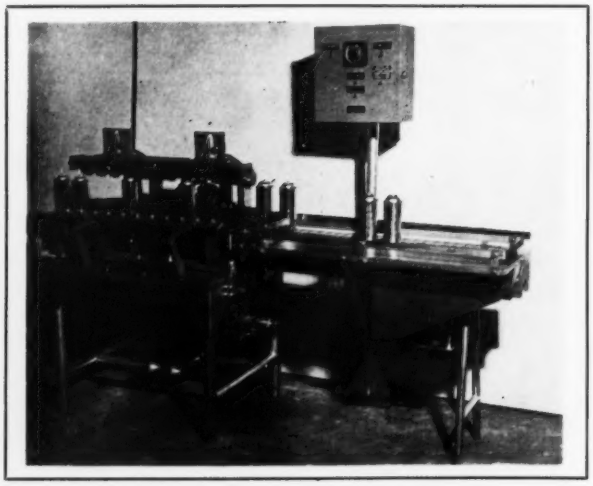

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supplied to said first and second passages and the fluid issues as a spray from said nozzle, a piston movable in said chamber parallel to said direction of movement of said valve actuating means, and means operative to displace said piston with said valve actuating means so that said piston compresses air in said chamber for discharge through said second passage of the nozzle, thereby to effect spraying of the fluid even in the absence of compressed gas in said receptacle.

★

Packaging Exposition Set

The tenth annual Western Packaging Exposition, which alternates between San Francisco and Los Angeles, will be held in San Francisco's Brooks Hall, July 17-18-19, 1962, it was announced recently.

★

Chemical Unit Planned

Plans for construction of a 40 to 60 million dollar petrochemical complex near Baton Rouge, La., were announced recently by Allied Chemical Corp., New York and Union Texas Natural Gas Corp., Houston, partners in the joint venture. Plans call for completion of construction in mid-1963. Union Texas will supply most of the raw materials required by the new plant.

★

Revlon Sales-Earnings Up

Net sales for the nine month period ended Sept. 30, were $104,527,000, as compared with $95,025,000 for the same period a year earlier, it was reported recently by Revlon, Inc., New York. Net income was $8,244,000, up from $7,801,000 in 1960. Earnings per share were $1.57, as compared with $1.50 a year earlier.

★

Addresses ACS Chapter

Morris J. Root, technical director of G. Barr & Co., Chicago, was the guest speaker at a recent meeting of the Roosevelt University chapter of the American Chemical Society. Speaking on "Push-button Living," Mr. Root traced the inventions that made the aerosol age possible and discussed the future of pressure packaging.

NEW COMBINATION
CAPPER
FOR AEROSOLS

BUILDER'S NEW "Combination Drill Press Capper" for Aerosol Bottles and Cans has a Production Rate of approximately 2 per minute with Aerosol Bottles . . . 8 per minute with Aerosol Cans.
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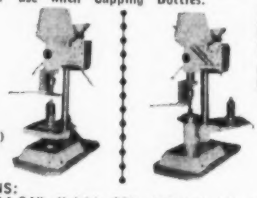

Bottle Capper (motor used)

Can Capper (motor not used)

DIMENSIONS:
Base Size: 14x24", Height: 30". 110 Volt AC, ¼ HP Motor
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Entomological Publications

Journal of Economic Entomology

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Subscriptions accepted on a calendar year basis only.

Annual Review of Entomology Volume 6

Volume 6 of this series appeared in January 1961. The five previous volumes, which are still available, established the high standards of the Annual Review of Entomology.

Price to organizations and non-members: $7.00 per copy postpaid in the U. S. A., $7.50 per copy elsewhere.

Miscellaneous Publications of the Entomological Society of America

This new periodical contains timely and scholarly articles of 20 printed pages or more. The individual numbers appear at irregular intervals. Each volume will contain about 200 pages.

Volume 1, Number 1, pp. 1-32 appeared October 1, 1959, and contains the symposium papers on Insecticide Resistance in Arthropods of Medical and Veterinary Importance given at the Salt Lake City meeting in December 1958. Authors H. F. Schoof, R. B. March, A. W. A. Brown, and Herbert Knutson. Single copy, $2.50.

Volume 1, Number 3, pp. 69-171 appeared July 27, 1960 and contains the following: "Swarming and Mating in Mosquitoes," by Erik Tetens Nielsen and James S. Haeger. "A Revision of the Genus *Chlaenius* Bonelli (Coleoptera, Carabidae) in North America," by Ross T. Bell. Single copy, $6.00.

Volume 2, Number 1, pp. 1-175 appeared October 19, 1960 and contains the 23 papers presented at the Symposium — Research Progress on Insect Resistance held at Washington, D. C., October 7 and 8, 1959. Single copy, $7.50.

Terms of Subscriptions: $10.00 per volume in North America and U. S. Possessions, $10.50 elsewhere.

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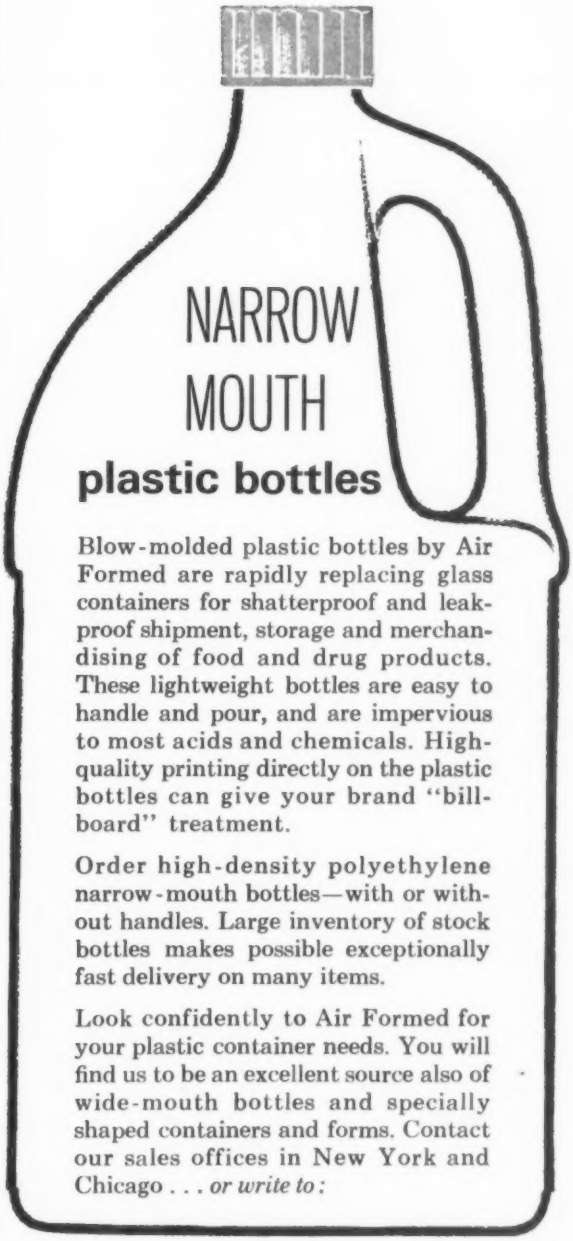

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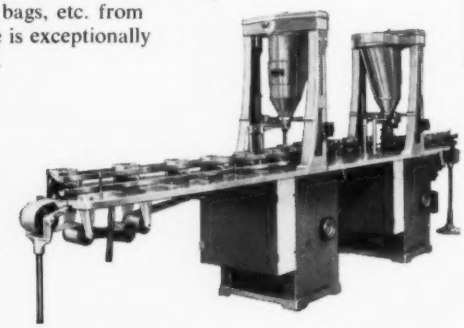
A diverse group of chemical products produced by the Dow Chemical Company are packaged by FMC Auger Fillers in a variety of container types and sizes. Insecticides, pesticides and similar chemical specialties varying greatly in density and flow characteristics are accurately filled with this type of equipment in Dow's plant at Midland, Michigan. Containers include bag sizes holding from 1 lb. to 20 lbs. of product and cans ranging from ½ lb. up to 4 lbs.

Among the FMC equipment used by The Dow Chemical Company is an Automatic Tandem Filler model HG-85, as illustrated. Completely automatic, it is available with a choice of filling methods—cam volumetric for complete fill at both stations; cam volumetric at one station and gross weighing at the other for bulk and dribble fill; or vacuum for pack filling dusty products—at speeds up to 70 containers per minute. • Many other models are available for large or small plants, automatic or semi-automatic operation, tight or loose fills, long or short runs to handle powders, granules and certain pastes. • Production-run accuracy has proved outstanding in filling cans, jars, boxes, bags, etc. from 1/16 oz. to 20 lbs. Changeover for product and size is exceptionally fast and simple. Speeds as high as 140 per minute.

For the whole story of how FMC Auger Fillers can improve your packaging, write for Bulletin P-811.



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Production...

EQUIPMENT · MATERIALS · PROCESSING

"Switching to Plastic Bottles"

"Containers for Specialties"

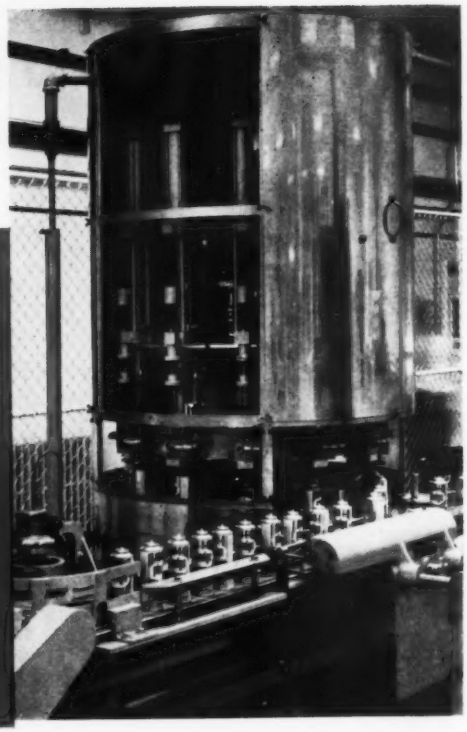
Deep Fleet Observer

New Patents

Bulletins and Equipment

One of the problems in switching from conventional bottles to plastic or lack of rigidity in polyethylene bottles. Capper shown is equipped with base with threaded stop, which is adjustable to allow jaws to hold but not grip bottle. Metal fingers on bottle at left protrudes over shoulder of bottle to hold it down when closure is stripped from cap. See article beginning on p 112.

KARL KIEFER
goes to London . .



Shown above: KIEFER Cadet Model VARI-VISCO Filler ready to measure any free flowing product into Aerosol cans or other wide mouth containers.

Shown right: KIEFER Gas Jet AEROSOL Charger prepared to do its full function to absolute perfection.

KIEFER

"Gas Jet"

AEROSOL CHARGER WITH THE COMPANION VARI-VISCO FILLER

If you will just read the appearing AEROSOL PACKAGING COMPANY letter, you will quickly learn why KIEFER is consumed with such pride and joy over an accomplishment. Good news travels FAR and FAST. When a modest BRITISHER bubbles over, he is actively enthusiastic.

Illustrated are —

1. KIEFER accurate Product Metering FILLER
2. KIEFER Air PURGER
3. KIEFER Gas Jet AEROSOL Precision CHARGER

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A/MNC/DEC

15th August, 1961.

Karl Kiefer Machine Co.,
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U.S.A.

Gentlemen:

In your last letter you did say that you felt my enthusiasm contagious and would like to pass it on and use statements I had made in my letter. I looked back at my letter of the 31st July and quite honestly I did not see what you could use. However, if you want something, here goes, and it is said with sincerity:

"The decision taken by us to purchase your filling equipment last year, we feel, has been fully justified and is going to be fully justified in the future. It is a beautiful piece of machinery, superbly manufactured. However good a piece of machinery is, though, it has to be backed up by service and meticulous attention to queries which obviously crop up when we are this side of the Atlantic. I would like to say how grateful we are for your attention and service during the installation period. We are extremely happy that we chose your equipment."

Kind regards,

Yours sincerely,

Michael Coombe

The Karl Kiefer Machine Co.

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Switching to Plastic Bottles

Case history of equipment modifications and actual operating experience involved in switch from glass to plastic bottles.

By F. W. Politi*,
Manager, St. Louis Laboratories,
Rexall Drug Company

RECENTLY, our company changed the bottles it was using to package one of its liquid products from glass to plastic. What modifications of equipment were involved in the switch and our actual operating experience should be of interest to firms considering packaging in plastic as a new venture.

We first learned that our merchandising group was interested in plastic bottles about 2½ years ago. At that time our fastest liquid filling lines operated at 70 bottles per minute. We had four such lines and had just developed cost data to justify the purchase of equipment to increase the speed of one of the lines to 120 bottles per minute.

When we learned of the interest in plastic containers we added a statement to our request for funds that all four of our lines contained vacuum fillers and, therefore, were not suitable for filling plastic bottles, whereas the proposed line would be. Our request was approved and our engineering department was asked to develop a line capable of producing our 10 highest volume items at 120 per minute in either glass or polyethylene.

We received assurance from the manufacturers that our present labeler would handle polyethylene and that they were prepared to supply special change parts for our four head capper that would be suitable for plastic bottles. These two pieces of equipment were to be the nucleus of our new line.

Samples of bulk and glass containers were sent to the equipment suppliers and bids were invited. The plastic container requirement was covered by a general statement because as yet we had no definite merchandising plans. Eventually, we purchased and installed an unscrambler, a cleaner, a filler and a case sealer.

Our existing lines had been assembled from individual units each having its own conveyor. Dead plates were required to bridge them. Our plans called for the elimination of dead plates on the new line.

A central control panel was set up adjacent to the labeler so that one operator could control all the units. We also had an individual control on each unit as an aid to the line mechanic. Automatic switches were installed at strategic places to cut the power if the line jammed. These controls were necessary because this was to be a close coupled line without surge space and was to be operated with a minimum of line personnel.

We were satisfied with the line which had been operating for about a year when we were asked to consider packaging milk of magnesia in polyethylene bottles of three sizes. We were told that our management was anxious to introduce the product in plastic bottles for our *next* major merchandising event.

Compatability tests had been run and were satisfactory and market tests had pointed to favorable dealer and consumer acceptance. The intention was to duplicate the shape of our private mold oval bottle in blue linear polyethylene and apply a paper label. The object was to retain identity with the added advantage of unbreakability.

The bottle supplier had been contacted and had promised to make molds and have bottles available, provided we reached an immediate decision.

The question was how much time did the plant need to get ready for production and what would be our costs?

We had had some experience with plastic bottles but it was at very slow production speeds. Milk of magnesia in glass bottles was packaged at a speed of 120 per minute and, if we were to maintain our costs, plastic bottles had to run at this same speed. A quick recheck with our suppliers was reassuring. They told us that the bottle design was a good one

*Based on a paper presented at the 23rd annual National Packaging Forum of the Packaging Institute, in New York, Oct. 19, 1961.

from an operating point of view. We might expect to encounter some difficulties because of the light weight and flexibility of the container but they expressed confidence that our staff could handle any difficulties that arose.

Our staff appreciated the vote of confidence but counseled patience. Wouldn't it be safer to get about 1000 sample bottles and make some trial runs before committing ourselves? Unfortunately, we did not have time for this. The decision had to be made immediately.

We answered that it was a calculated risk but it was our best judgment that we could produce the new package at the same labor cost as the glass bottle and that we could be ready by the requested in stock date.

It should be admitted that the fact that our company had just purchased a plastic bottle manufacturing plant contributed to our positive thinking. We requested the bottle supplier to make one mold first and send some sample bottles as soon as possible so that we could start on the necessary change parts. The supplier was given an order to make capper change parts and our engineering department made the parts for the labeller.

The accompanying photographs illustrate the areas where we experienced difficulty and where steps were taken to remedy them.

Figure 1 is a view of the unscrambler. We changed from a service carton to a reshipper containing 12 bottles and no longer use the hopper you see in the background.

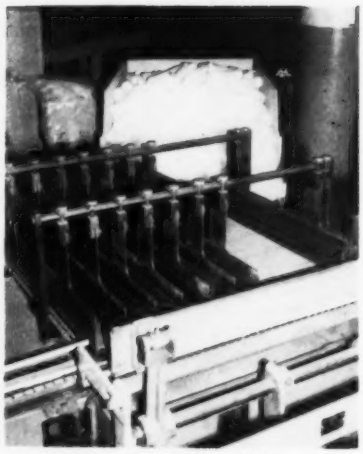


Figure 1. Unscrambler

The wide belt on the unscrambler places the bottles on a conveyor which runs at right angles to it. There is a narrow dead plate which holds back the bottles while one line of them is transported to the cleaner. Plastic bottles of milk of magnesia worked satisfactorily on this equipment. However, we later converted rubbing alcohol to a plastic bottle and ran into difficulties. This problem illustrates the effect that container shape might have on line performance. The rubbing alcohol bottle is round with one flat face. Because of the light weight of the container and the reduced surface contact, we found that an occasional bottle would start down the conveyor too soon and jam into other bottles just entering the conveyor. We replaced the back flat rail with a scalloped one having the contour of the line of bottles. The rail was stationary until the entire line of bottles was on the conveyor and then was pulled out of the way by cam action to release the line all at one time.

The bottle cleaner is shown in Figure 2. At the top left of the picture is a conveyor for carrying reshipper cartons to the packing station. The two turntables (top right and center) presented a problem.

Figure 3 is a close up of one of the turn tables as we modified it. The original equipment consisted of the bottom plate and two light weight semi-circular rails. Adjustments for different size bottles were accomplished by moving the inside rail. This, of course, had more effect at the center than at the ends so it was necessary to change the curvature of the inside rail. While this was not entirely satisfactory, we were able to "get by" with glass bottles. Such was not the case with plastic. Even after the most careful adjustment we encountered jamming and occasionally a bottle squeezed out and popped up in the air. Our first attempt at correction consisted in reducing friction with "Teflon" tape. The result could be described as a partial success. There were fewer bottle flying but they flew

Figure 2. Cleaner

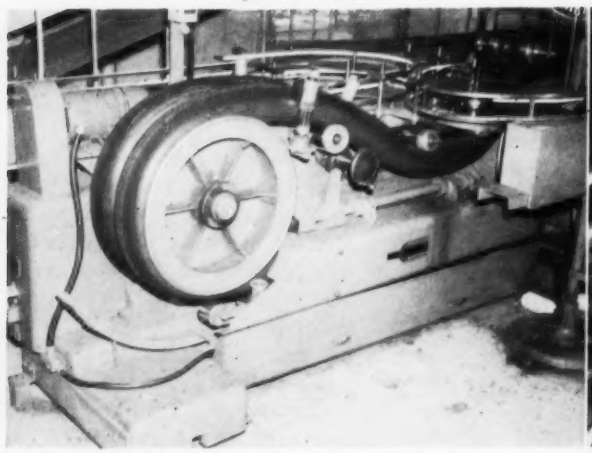
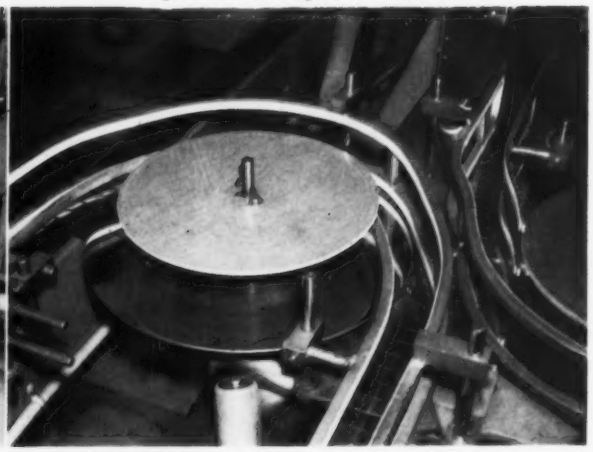


Figure 3. Close-up of one turntable



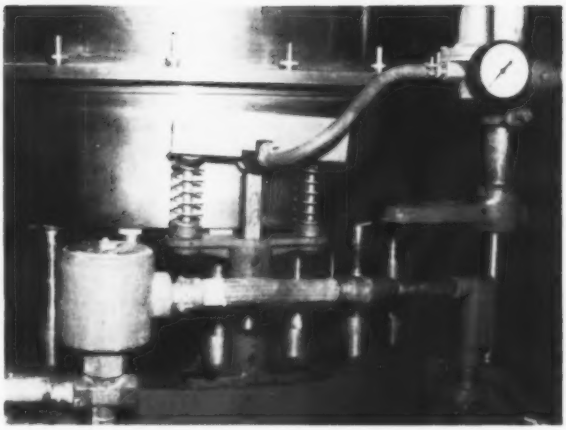


Figure 4. Gravity filler

Figure 5. Special capper parts

higher. By this time the rails had been bent so often that we decided to replace them with rails of a stiffer metal. This improved the situation but still was far from satisfactory. We continued to have difficulty until we replaced the inside rail with a disc attached to the center post of the turn tables. This was a complete success. The disc, rather than presenting a source of friction, actually helps to push the bottle around the curve. As can be seen, the outside rail is lined with a "Teflon" strip to reduce friction. Changeover consists in simply replacing the disc with another of the proper diameter.

One automatic switch is located between the cleaner and the filler. Its function is to control the flow of bottles by stopping the unscrambler and cleaner when the bottles back up to the switch location. The switch is kept closed by a current of air directed at a flat plate to which it is attached. A spring opens the switch when the bottles back up and block the air flow. We found it necessary to relocate and adjust the air jets because the current of air was strong enough to hold light plastic bottles against the back rail.

The gravity filler, shown in Figure 4, operates with an optional vacuum assist. At the beginning of the filling cycle it is possible to apply low vacuum to the vent of the filling nozzle to start the liquid flowing. This is a momentary vacuum and filling is accomplished by gravity flow during almost the entire filling cycle. At the end of the cycle, the product may enter the vent tube. Milk of magnesia has a tendency to plug this vent and we were unable to apply enough vacuum to clear it without collapsing the container. Even slowing the line resulted in some partially filled or empty bottles.

Our local representative was called in and asked for his recommendations. The solution he suggested was one that we felt should have been obvious to us. "If you can't clear the vent with vacuum, why don't you use pressure?" We tried it and it worked.

Figure 4 also shows the air line with its gauge. The filling nozzle is "blow cleaned" when it makes momentary contact with a shoe to which the air line is connected. The nozzles are vented through holes in the ring which encircles the filling bowl. The surface of the ring is machined and springs insure a tight fit.

Special capper parts required for plastic bottles are shown in Figure 5. The usual capper gripper parts are of padded metal and hold the container by spring ten-

(*Turn to Page* 271)

Figure 6. Flame treating plastic bottles

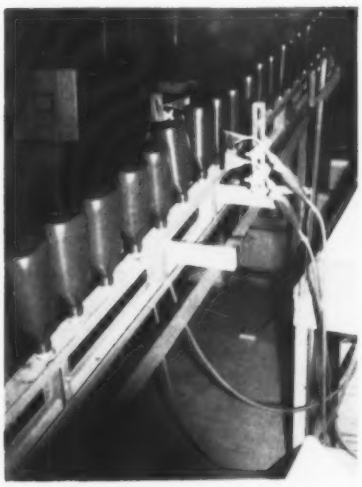
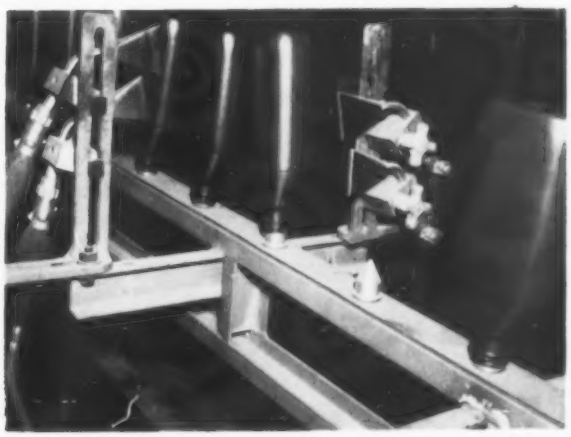


Figure 7. Close-up of fish tail burner nozzle used to spread flame over entire bottle surface.



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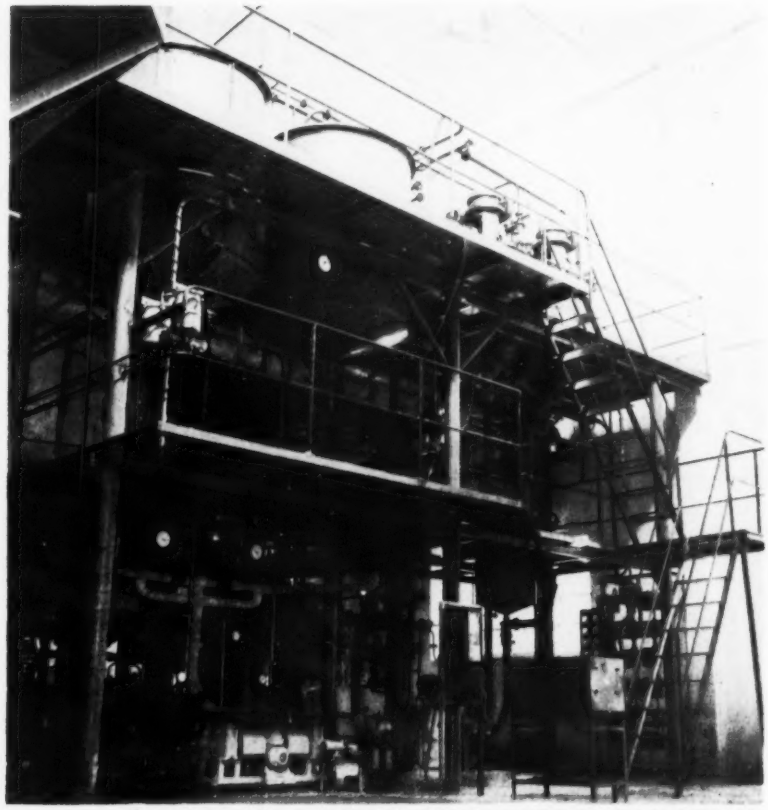

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Chemical Specialties Containers

By Thomas E. Dowling*,
American Cyanamid Co.,
New York

Part II

MULTIWALL paper shipping sacks are used universally for packaging powdered, flaked, chipped, granular and lump materials. They are unique among containers, in that they can be tailored to fit exactly the size and strength requirements of the products they hold.

Made from continuous rolls of heavy-duty kraft paper, multiwall bags have two to six plies tubed and nested so that each ply carries its share of the load. Ply weight is specified as the weight of a ream of 500 sheets of kraft paper 24 inches by 36 inches. For example, a bag construction might be shown as 1/50, 1/60, 1/70. This means it's made of three plies of kraft — a 50-pound ply on the inside, a 60-pound ply in the middle and a 70-pound ply on the outside. The total basis weight of the bag is 180 pounds.

Multiwall bags are made in two basic styles — open-mouth and valve — either of which may be of "sewn end" or "pasted end" construction. Open-mouth bags are filled through the open top, then closed by sewing, taping or gluing. Valve bags are filled through a small valve or opening in one corner of the otherwise closed bag. The closure is made by manually folding an external paper sleeve or by the check-valve action of an internal paper sleeve.

Pasted construction has become increasingly popular in the past few years for several reasons. It fills out to a squarer unit with straighter sides, forming a more stable palletized load. Because it fills out better in the corners and edges of the bag, less paper is used per bag and the cost is often lower than for a sewn bag of equal capacity. Flat end and edge surfaces are good areas for printing so that more effective decoration and design is possible, particularly on palletized units that only expose these areas.

Moisture Barriers

Various types of moisture barrier plies may be added during construction, depending on the degree of product protection required. One, known as asphalt-laminated sheet (AL), is made by sandwiching asphalt between two plies of kraft. Though not as effective as other types, asphalt-laminated barriers are among the least expensive. Where minimum protection is required they may be satisfactory. But they are stiff and hard to handle in cold weather, tend to gum up needles on sewing equipment, may bleed through if product is packed hot, and contaminate pulp in a paper beater, if that is the method of disposal.

Gaining in popularity is the moisture barrier formed by applying a thin film of polyethylene to kraft. It can be sewn through easily, remains more flexible than asphalt at low temperatures, is unaffected by products packed as hot as 190° F. Bags empty cleanly when these barriers are used as the inside ply.

More recent developments include free-film PE sheets sewn into multiwall kraft bags, and one ply plastic film bags from five to 10 mils in thickness, depending on the service required and type of plastic being used. Closure problems have plagued the all-plastic bags as they have the all-plastic rigid and semi-rigid containers. These difficulties are being overcome.

A number of bag manufacturers are now selling a moisture barrier in terms of degree of performance rather than thickness of film, density of resin, etc. This follows a broad trend in industry to specify performance, rather than to rigid material specifications. Other factors being acceptable, it really does not matter how a bag manufacturer provides protection as long as the user gets what the product needs.

Many special features are available to multiwall bag users: Wet-strength kraft, which is regular kraft to which melamine resin has been added during manufacture, retains a significantly greater portion of its strength when wet. Antiskid treatments help maintain stability in palletized units and fiber-free inside plies protect critically pure products.

Improved manufacturing methods now permit use of thinner and less expensive PE films for protection equivalent to that afforded formerly by much heavier barriers.—A few years ago, a 20-pound PE film gave only as much protection as a 10-pound film provides today. High-density PE resins are available as efficient moisture barriers. Although more highly priced — pound for pound — than conventional PE resins. They are more economical in this applica-

*Paper presented at 34th annual convention, Assn. of American Soap & Glycerine Producers, New York, Jan. 25, 1961.

tion because a thinner film does the job.

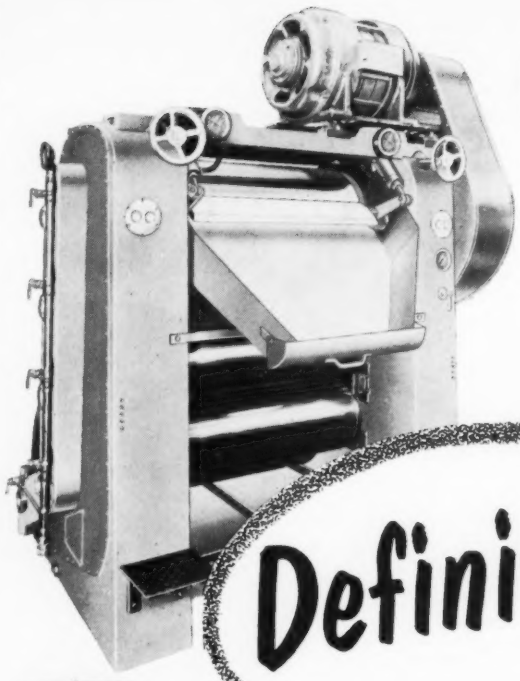
Most important innovation in bag construction in recent years has been the introduction of extensible kraft paper. This is kraft paper made with what is essentially a very slight crepe, which provides a built-in stretch or toughness factor. It is more flexible and can absorb more shock and punishment than regular kraft before breaking. Thus, an extensible kraft bag of perhaps ten to 15 per cent less total basis weight than a conventional bag may give equal or superior performance and save some money, too.

Extensible kraft can be produced with all the conventional barriers such as PE and asphalt with rough or smooth finishes; in bleached, semibleached or natural kraft; and it takes printing very well. Many companies have converted a high percentage of their multiwall bags to extensible kraft over the past year or year and a half. The net result has been equal or superior shipping performance and perhaps a saving of a few dollars per thousand bags.

Multiwall bags should have just enough strength to satisfactorily contain the product and deliver it to the customer safely and in good condition. A small percentage of breakage (something on the order of less than one half per cent) may be normal and often occurs, unless bags are grossly overconstructed. Because of this normal breakage, multiwall bags are not—as a rule—used for expensive products—those costing upwards of one dollar per pound. However, if the construction is selected carefully, and packing and shipping are well controlled, even shipments of products as expensive as this can be made in bags.

With any number of excellent packing machines available, multiwall bags afford perhaps the fastest and least expensive way of packaging solid materials. Bags can be handled as individual packages, or, with common power equip-

(*Turn to Page* 247)



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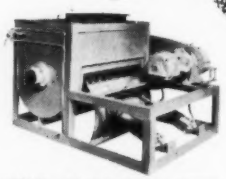

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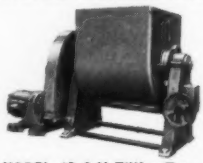

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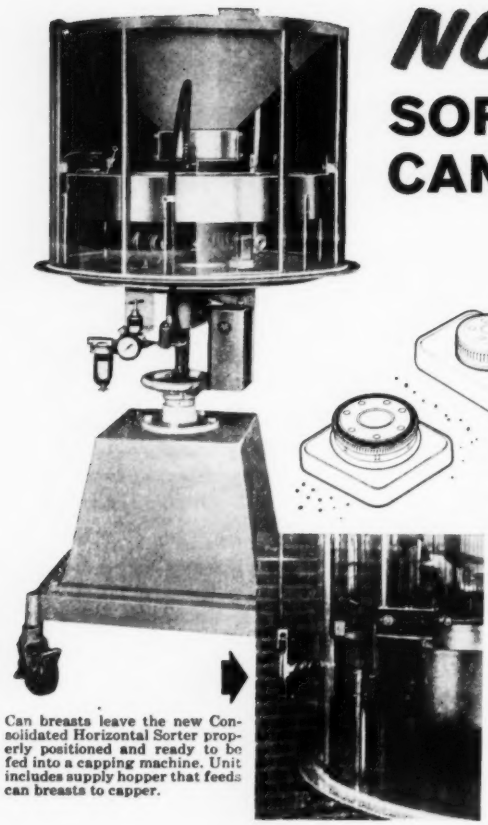

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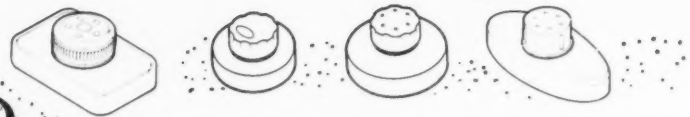

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soap plant observer

By Willis J. Beach,
Technical Service Department,
Sugar Beet Products Co.

THE National Conference on Weights and Measures, held earlier this year under the sponsorship of the National Bureau of Standards, took further steps to unify the marking requirements and variations for commodities sold intra-state in package form. While the matter of weight and measure markings on containers is the responsibility of the individual states, uniformity in weights and measures laws and methods of inspection will result from the Bureau's efforts, which are a partial fulfillment of its responsibility for cooperation with the states in this field of endeavor.

Last year, a model state regulation was drawn up which was amended at this year's meeting. A summary of the model being offered to the states is presented here. The Bureau assists in the technical training of state weights and measures officials and most of the states are rapidly adopting the model for their own use. Here are some of its highlights:

1. The regulation shall apply to *any* commodity in package form, and the declaration of identity shall *positively identify* the commodity unless it can easily be identified through the container.
2. The declaration of quantity shall disclose the *net* quantity.
3. The declaration of quantity shall be expressed in such terms as have been firmly established in general customer usage and trade custom. But if there exists no firmly established usage or custom, the declaration shall be in terms of liquid measure for liquids, or of weight measure for solids,

semi-solids, viscous materials, or mixtures of solid and liquid. NOTE: For aerosols, the declaration of weight shall *include* the propellant.

4. The quantity declaration shall be in pound or ounce avoirdupois for weight measure; and in U. S. gallons of 231 cu. in., or liquid-quart, liquid-pint and fluid-ounce sub-divisions of the U. S. gallon in the case of liquid measure. It shall express the volume at 68° F. (except when the commodity is normally sold while frozen or refrigerated). The U. S. standard barrel is 7,056 cu. in. Declarations may be in ¼, ½, and ⅓-barrel subdivisions. Declarations in U. S. customary units may be supplemented by metric units. Drugs may be declared in terms of apothecaries, or metric measure, and exports may be in the system in common use in the export countries.
5. Distinction must be made between "avoirdupois" and "fluid" ounces, and between "liquid" and "dry" quarts and pints. However, it may be omitted when, by association of terms, (as in 1 pound, 4 ounces) the proper meaning is obvious.
6. The quantity declaration shall be expressed in terms of the *largest whole unit* of weight or measure, i.e., "1 quart liquid" and not as "2 pints liquid" or "32 fluid ounces." However, when this results in a whole number and a fraction, the fraction may be expressed in its equivalent in the next smaller whole unit. For example, 1¾ quarts liquid may be expressed as "1 quart, 1½ pints liquid" or "1 quart, 1 pint and 8 fluid ounces," but not as "1 quart, 24 ounces." 1¼ pounds may be expressed as "1 pound, 4 ounces." The model regulation allows some variations in the above stipulations provided they are in accord with usage and custom.
7. In the case of fractional quantities, the model regulation calls for the use of only binary-submultiple common fractions or decimal fractions. The common fraction shall be reduced to lowest terms and decimals shall not be carried out more than two places. Here again certain variations consistent with usage and custom are permitted.
8. A declaration in terms of numbers or count may be used but must be accompanied by a statement of the weight, measure or size of the units of the commodity, or of the total weight of the commodity, unless the count alone fully informs the customer. Also, a declaration of quantity in terms of weight or measure must be supplemented by a count or size statement of the

individual units, unless the weight or measure statement is considered fully informative.

9. A declaration of quantity shall express *average net quantity*. However, it may express *minimum quantity* if some such words as "minimum quantity" or "not less than" fully identify the meaning.
10. In no case shall a declaration of quantity be qualified by such words as "when packed," nor by such terms as "jumbo," "giant," "full," or the like.
11. Packages to be sold at a location other than where packaged shall bear the name and address of the manufacturer, packer or distributor in the English language. All information required to appear shall be *prominent, definite and plain*, and shall be *conspicuous* as to size and style of letters and numbers, and as to color in contrast to background. Such information shall appear on the principal display panel of the package. All information required for the package must appear also on the *outside* container, unless same is transparent and the information on the inner package is easily legible through the outer one.
12. Variations from the declaration of net quantity shall be permitted when caused by *unavoidable deviations* in weighing, measuring or counting the contents of individual packages that *occur in good packaging practice*. However, the *average* of the quantities in a shipment or lot must not be below the quantity stated. No unreasonable shortage in any package is permitted even though averages in other packages in the lot may compensate, and the variations above the declared quantity shall not be unreasonably large.
13. Where the *minimum* quantity is declared, no packaging variations below the declared minimum are permitted. Variations above the declared minimum shall not be unreasonably large.
14. Variations shall be permitted when *caused by ordinary and customary exposure* to conditions that normally occur in good distribution practice and that *unavoidably* result in change of weight or measure, but *only after the commodity is introduced into intra-state commerce*. The phrase, "introduced into intra-state commerce," means the time and place at which first sale and delivery of the package is made within the state, the delivery being made either (a) to a purchaser or his agent or (b) to a common carrier for shipment to the purchaser. As long as the commodity remains in the possession or under control of the packager or person who introduces the package into intra-state commerce, *exposure variations shall not be permitted*. The magnitude of the variations permitted shall be determined by the facts in the individual case.

We learn from the Bureau that the states normally interpret their laws as requiring that a lot or delivery of packages containing a "high-shrink" item contain on the average at least the declared quantity when the lot or delivery enters the commerce of the state, and they then permit such reasonable losses as are encountered in good distribution practices. In view of this, packagers of commodities subject to weight loss through shrinkage will do well to seek and use packaging materials that provide an effective moisture barrier.

★

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JG Machine Works can do special stainless steel fabricating including tanks, conveyors, etc.

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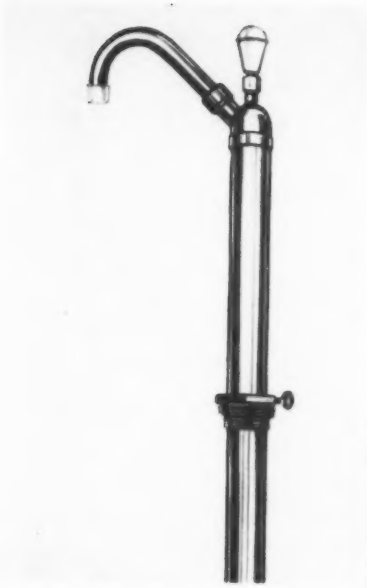


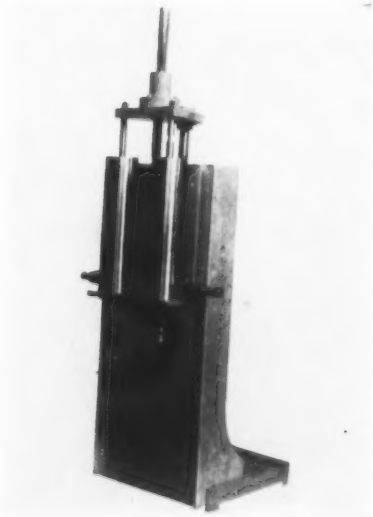
New Tolco dispensing pump

valve provides self-priming feature and non-draining of the pump cylinder. Constructed of nickel-chrome plated steel, the "D-22" pump can be used for 15, 30 and 55 gallon drums with one and one-half and two inch openings, eliminating stacking. Each pump, weighing five and one-quarter pounds, is packed in an individual reshipper carton, 25 to the case.

★

Twin Scientific Filler

Scientific Filter Co., New York, recently introduced its "Accu-Measure" piston filler in a twin mounting for greater output or for handling two different liquids at the same time. The unit, which fills independently and is said to provide accuracy of fill to within one per cent, is suitable for all sizes and types of plastic bottles, aerosol cans, pressure spray bottles, plastic bags; glass and tin containers.



Using less than one-quarter cubic foot of air per minute at about 15 to 35 pounds pressure, each piston fills pre-set amounts directly from supply source into final container under total exclusion of air, the company states. Air operated foot valve controls the filling, leaving hands free for moving containers.

★

Chlornaphthalene Supplier

Monochlornaphthalene, used in polishes and wax additives, is available from Aceto Chemical Co., 40-40 Lawrence St., Flushing 54, N. Y., it was annouced last month. The material is also used in protective coatings and a number of other applications.

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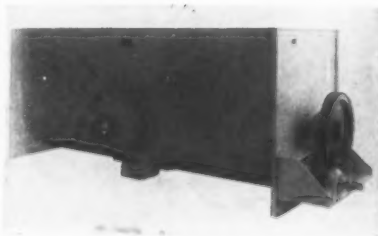

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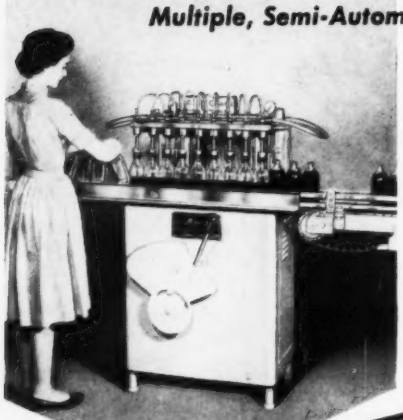

MODEL B-49
STRAIGHTLINE
VACUUM FILLER

Fills 4 to 9 containers simultaneously. Lever engages and disengages filling stems, otherwise operation is automatic. Adjustable for container heights up to 14". Stainless steel construction; plastic available. Discharge conveyor optional. Write for "Bulletin B-49."

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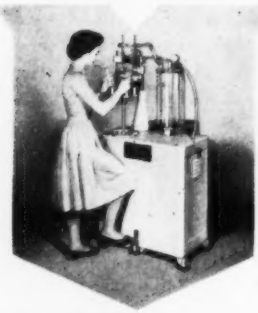
YOU CAN spark your entire packaging operation with the right filler. Anything short of that can snarl your packaging pace. With a half century of experience in liquid filling, our engineers can specify filling procedure that will head your packaging operation most economically. Our recommendations will not obligate you. Please send sample of product, a dozen containers of each size to be filled and advise desired filling rate per minute, hour or day. Address our home office.



Steady Filling

MODEL B-2 VACUUM FILLER. Fills 2 containers while 2 filled containers are being removed and 2 empties loaded. Thus, filling is continuous. Handles containers up to 4½" dia., up to 13" high. Stainless steel construction. Plastic available. Portable. Filling is fast, efficient. Write for "Bulletin B-2."

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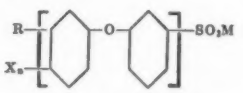
new patents

Listed below are brief abstracts of recently issued patents. Complete copies may be obtained from the publisher of this magazine: — MacNair-Dorland Co., 254 W. 31st Street, New York 1, N. Y. Remit $1.00 for each copy. For orders received from outside of the United States send $1.50 per copy.

No. 2,992,995. Alkaline Composition for Cleaning Metal, patented by Benjamin Arden, Los Angeles, assignor by mesne assignment to Purex, Corp., South Gate, Calif. The invention covers a composition which is suitable for removal of combustion deposits from engine component parts, and which consists essentially of from about 4 to about 40 parts by weight of an alkali metal hydroxide, from about 1 to about 45 parts by weight of a metal complexing agent chosen from the group consisting of the water soluble alkali metal salts of an aliphatic hydroxy acid and the water soluble alkali metal salts of a fatty acid of less than four carbon atoms, said aliphatic hydroxy acid being chosen from the group consisting of lactic acid, citric acid, tartaric acid, gluconic acid, glyceric acid, malic acid, glycolic acid, and saccharic acid, and from about 1 to about 30 parts by weight of a mixture of polyalkanolmonoamine wherein each of the alkanol chains comprises from one to about four carbon atoms and said polyalkanolmonoamine has a boiling point in excess of about 400° F. and an alkali soluble and alkali stable polyalkanolpolyamine wherein each of the alkanol chains comprises from one to about three carbon atoms and said polyalkanolpolyamine has a boiling point in excess of about 400° F., in said mixture of polyalkanolpolyamine and polyalkanolmonoamine the weight ratio of the polyalkanolpolyamine to the polyalkanolmonoamine being approximately from 1/22 to approximately 5/9.

No. 2,992,187. Method of Removing Rust, patented by Herman Gershon, North Bergen, N. J., assignor to Pfister Chemical Works, Inc., Ridgefield, N. J. This patent teaches the method of removing iron rust from rusty objects, which method comprises treating rusty objects with a solution consisting essentially of from 1% to 50% by weight of sodium hydroxide and from 0.01% to 10% by weight of a sequestering agent, the balance being essentially water, said sequestering agent consisting essentially of a mixture of from 1 to 3 parts by weight of sodium glucoheptonate with from 3 to 1 parts by weight of sorbitol, for a sufficient time to remove the rust from the objects and cause the rust to dissolve in the solution, discontinuing the aforesaid treatment when the rust has been removed, and thereafter rinsing and drying the objects.

No. 2,992,999. Dry Cleaning Solvent Containing Halo-Alkyldiphenyl Oxide Sulfonates, patented by Joseph A. Smith, Lake Jackson, Tex., and Alfred F. Steinhauer and Joseph C. Valenta, Midland, Mich., assignors to Dow Chemical Co., Midland. Described is a substantially water insoluble dry cleaning solvent having dissolved therein from about 0.25 to 20 percent by weight of a salt of an alkylated halogenated diaryl oxide sulfonate having the formula



wherein R is an aliphatic hydrocarbon radical having from 8 to 22 carbon atoms, inclusive, M is an alkali metal, X is a halogen having an atomic number of from 17 to 35 inclusive and n is an integer from 1 to 2.

No. 2,9992,997. Method for Derusting and Removing Heat Scale from Ferrous Bodies and Compositions of Matter Useful Therefor, patented by Benjamin Arden, Los Angeles, and Frances E. Clark, San Gabriel, assignors by mesne assignments to Purex Corp., South Gate, Calif. A composition is patented suitable for derusting of iron when used in water solution, said composition consisting essentially of a mixture of an alkanolamine in which each carbon chain has 2 to 3 carbon atoms, said alkanolamine being a member of the group consisting of trialkanolmonoamines and polyalkanolpolyamines, and polyalkanolpolyamines containing up to 6 alkanol groups and up to 4 amino groups, a water soluble salt of a hydroxy aliphatic acid chosen from the group consisting of lactic acid, citric acid, tartaric acid, gluconic acid, glyceric acid, malic acid, glycollic acid, and saccharic acid, and water soluble alkali such that when said composition is added to water the resulting solution has a pH in excess of 13, said mixture consisting essentially of from about 2% to 95% by weight of said alkali, about 2% to about 62% by weight of said alkanolamine and from about 2% to 50% by weight of said salt, the said ingredients totaling 100% of said mixture.

No. 2,991,220. Insecticidal Repellent, patented by Willis Nels Bruce, Champaign, Ill., assignor to Lee Ratner, Miami Beach, Fla. Patented is an insecticidal repellent comprising a combination of from about 2% to about 99.5% by weight of di-n-butyl succinate and from about 98% to about 0.5% by weight of an organic phosphate insecticide selected from the group consisting of phosphorothioic acid O,O-diethyl-O-(2-isopropyl-6-methyl-4-pyrimidinyl) ester, malathion, and O,O-dimethyl-O-(2,4,5-trichlorophenyl) phosphorothioate.

No. 2,992,996. Nontarnishing Detergent Composition, patented by Jay C. Harris, Dayton, assignor to Monsanto Chemical Co., St. Louis, Mo. A detergent composition is covered comprising a synthetic, organic detergent selected from the group consisting of anionic and non-ionic detergents which normally tarnish copper base alloys, and in combination therewith a small amount of a 1-alkylamono-2,3,5,6-tetrahydro - 1 - imidaz-(1,2-a)-imidazole in which the alkyl radical has from 4 to 24 carbon atoms sufficient to inhibit tarnishing of the copper base alloy.

No. 2,997,444. Drain-Pipe Cleaning Composition, patented by Harry Martin, Monroe, N. Y., assignor to Chase Manhattan Bank and John M. Friedman, administrators of estate of Harry Martin. The patent teaches a method for cleaning drain-pipes which comprises placing in a drain-pipe to be cleaned, a dry composition consisting essentially of about 25 parts by weight of caustic alkali and about 1 to 7 parts by weight of an anticlogging compound selected from the group consisting of sodium hydrosulfide, potassium hydrosulfide, sodium sulfide, potassium sulfide, sodium thioglycolate, potassium thioglycolate, guanidine thioglycolate, Bunte salts, and mixtures thereof and then in the drain-pipe reacting said composition in the presence of water with water-insoluble organic matter which is clogging said drain-pipe to produce an aqueous solution of said organic matter.

No. 2,983,722. Fungicidal Compounds, patented by Carl Horowitz, Brooklyn, and Meyer Mendelsohn, New York, asignors by mesne assignments to Yardney International Corp., New York. An antimicrobic agent is patented comprising the reaction product of a partially depolymerized alginic acid whose viscosity at pH 7 ranges substantially between 1.25 and 1.75 centipoises, and the oxides of silver and of a metal chosen from the group consisting of copper, cadmium and zinc.

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products and processes

Shave Cream and Lotion

Acetylated lanolin is suggested for use in an aerosol shave cream and in an aerosol hand lotion in a technical bulletin available from American Cholesterol Products, Inc., Edison, N. J. The firm makes "Modulan" acetylated lanolin and "Acetulan" acetylated lanolin alcohols.

Aerosol shave cream

	%
"Modulan"	0.8
Myristic acid	2.0
Stearic acid XXX	6.0
Cetyl alcohol	0.5
Sorbitol solution U.S.P.	3.0
Triethanolamine	4.0
"Tween 20" (Atlas)	2.5
"Tween 80"	2.5
Neutral soap	1.0
Borax	0.1
Water	77.6
Perfume and preservative	q.s.

Aerosol hand lotion

	%
"Modulan"	1.5
"Acetulan"	1.0
Stearic acid XXX	5.0
Cetyl alcohol	1.0
"Deltyl Extra" (isopropyl myristate, Givaudan)	0.5
Triethanolamine	2.0
Propylene glycol	4.0
PVP, type NP-K30	0.3
Water	84.7
Perfume and preservative	q.s.

To pressure package either of above products use:

	% by wt.
Concentrate	92.0
Propellants 114A/12 (43/57)	8.0

—★—

Gas Chromatography Data

World literature on gas chromatography during 1960 is offered in form of abstracts in the current edition of "Gas Chromatography Abstracts," edited by C. E. H. Knapman.

In 875 abstracts the volume presents material culled by a staff of 35 abstractors from more than 140 publications in a wide variety of languages. Trade journals are represented along with highly theoretical publications. An excellently arranged subject index and an author index are appended.

The present volume is the second such collation produced by the abstracting service of the Gas Chromatography Discussion Group (Associated with the Hydrocarbon Research Group of the Institute of Petroleum).

Gas Chromatography Abstracts—1960, edited by C. E. H. Knapman, U. K. Atomic Energy Authority Production Group, published by Butterworth, Inc., 7235 Wisconsin Ave., Washington 14, pp. 200, clothbound.

—★—

Aerosol Fabric Size

Aerosol packaged fabric sizes and ironing aids based on CMC (sodium carboxymethylcellulose) are suggested in a new technical bulletin (VC-425) just published by Hercules Powder Co., Wilmington, Del. A basic formulation is suggested for such a product:

	% by wt.
CMC "Hercules 7L"	2.0
"Blancophor ES-73" (GAF optical brightener)	0.2
Silicone "LE-46" (35%) (Carbide)	0.2
Sodium benzoate:sodium nitrite 5:1	0.2
Total solids	2.6
Water	97.4
	100

Experimental packages were loaded by filling eight ounces of this solution with 20 ml. isobutane propellant in a 12-ounce K50Q6 lined, seamed can by American Can Co. A Newman-Green B-14-50 rust resistant valve and B-14-3 sprayhead with a 0.027 inch internal metering orifice made up the spray assembly. This particular sprayhead can be removed from the can for rinsing with water.

Can is shaken lightly before use. Directions say: "Spray fabric lightly, and iron dry. Repeat process if necessary . . . "

The product is said to cast a water-soluble noncrystalline, transparent flexible film, which makes garments soil resistant, easy to wash and improves whiteness retention.

—★—

Data on New GAF Polymer

"Gantrez AN," a recently developed water soluble polymer, is described in a 40-page technical bulletin just published by the commercial development department of General Aniline & Film Corp., 435 Hudson Street, New York 14. Available in several molecular weights, "Gantrez AN" is a water soluble polyelectrolyte. Chemically it is poly (methyl vinyl ether/maleic anhydride).

The booklet covers physical, chemical, and physiological properties as well as a wide range of applications. These include, among others, detergent bars, shampoos, and hair sprays; liquid hand cleaners, built detergents, and acid bowl cleaners; polishes; and herbicide and pesticide formulations. Over 80 literature references are appended.

Containers

(*From Page* 238)

ment, as palletized units of 1,000, 1,500 or 2,000 pounds. In the domestic market, the trend has been away from 100-pound units and toward 75- and 50-pound units, particularly for products that the consumer handles individually. For the export market or for unitized shipments, however, 100-pound net bags are completely satisfactory.

Bags shipped in palletized units or in full carload or truckload quantities, can be of somewhat lighter construction than those shipped as single units or in less-than-carload or truckload lots. As a rough guide, domestic bags have from three to five plies and a total

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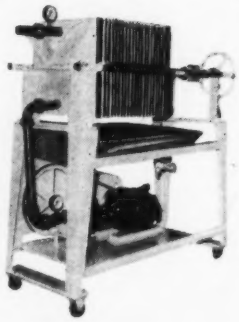

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basis weight of anywhere from 140-280 pounds. Export bags usually have five or six plies with a total basis weight of 270-350 pounds. And even if the product is not hygroscopic, export bags often contain a moisture barrier and/or a wet-strength outer ply to guard against unusual outside exposure.

Drum Shipping of Solids

Fiber drums enjoy wide popularity and offer great advantages in the shipment of many solids. They are tough but also lightweight and easy to handle. Constructed entirely of fiber, or a combination of fiber and steel and/or wood, the bodies are convolutely wound with about eight to 10 plies of kraft bonded together over their entire surfaces with suitable adhesive. Metal-fiber drums feature metal end reinforcements, with bottom heads double-seamed to the drum bodies. The cover is made of 24- or 26-gauge steel sheet that is coated with baked resin and carries a flowed-in rubber gasket.

The cover is secured to the drum body with a lever-action metal closing ring. Moisture barriers composed of polyethylene, aluminum, asphalt and other materials can be made an integral part of the drum construction.

Fiber drums for solids range in size from three quarters of a gallon to 67 gallons. Depending on the net weight of product to be packed, several constructions of drum can be obtained in any given size. As with multiwall bags, only as much strength need be purchased as is required for the job.

Drums of any given capacity are made in two different diameters and two different heights. This permits nesting of empty containers for shipping with resulting savings in freight charges. Disadvantages are 1) the need to "un-nest" each drum and 2) the inconvenience of having two different heights in pallet storage.

Again, fiber drums for solids are not suited to outside storage unless they are given special exterior treatment. This may be clear varnish, paint, a PE ply on the outside, and waterproof tape applied at the juncture of the bottom metal chime and sidewall.

There is one type of all-fiber drum on the market that is essentially straight-sided and has a nearly square cross section. It was developed to conserve valuable cubage in export shipments. Fiber drums, full or empty, can be stored in palletized units at least two or three tiers high. They are used extensively for domestic and export shipments, can be readily decorated and—because of their low tare weight to net weight ratio—add a minimum to shipping costs.

Light-gauge steel drums with fully removable heads, friction lids and other special closures are also suitable for the shipment of solids. They are particularly valuable where unusually rugged shipping conditions or outside storage are likely to be encountered.

Powdered materials may also be packaged in steel pails with fully removable head, constructed of 24 or 26-gauge steel and having one to 10 gallons capacity. These pails feature lug or lever type covers that are equipped with flowed-in rubber gaskets and wire bail handles. Containers can be resin lined, as required.

Units less frequently used, but valuable for specific purposes, include corrugated fiberboard boxes with plastic film liners, wide-mouth glass jars, bottles, tin cans and fiber canisters.

Regardless of the type of container ultimately selected, these few pertinent points are always worthy of consideration:

1. If export shipments are to be made in any volume, dimensions for the containers should be set to take full advantage of steamship conference regulations in calculating export cubage. Calculations are made with a formula, standard in the industry, and involve dropping of fractional inches less than ½ inch, etc. A check with the conference involved will provide all necessary information. I would like to stress, however, that savings in this area can be very substantial, considering the shipping rates of several dollars per cubic foot, which often prevail.
2. Unitized shipments of practically all types of containers are possible with available lift equipment, pallets, and other devices. They may save labor and containers.
3. Packaging should be considered as long as possible before shipment of any product is started. This may call for a test program involving drum lining tests for liquids, moisture absorption tests for solids, bag filling tests, and others. Many organizations try to provide for as much as six months of testing prior to commercial product packaging. In any event, when the product is first distributed, the packaging procedure should be fully established. Whenever possible, the research facilities of the container suppliers should be utilized.
4. Many products, solids and liquid, fall into hazardous classifications established by the ICC and other regulatory agencies. These require that such products be packaged in specific containers, constructed in compliance with certain rigid specifications. As mentioned earlier, it is in this area of container specification that the concept of performance standards rather than materials of construction should be established and used as sole criterion for a container's fitness.

As mentioned in our introduction, the responsibility for selecting a package frequently fails to be placed thoughtfully upon the right individual. It is hoped that this review will serve to point up the importance of this responsibility and the great part played by the correct choice of container in the successful distribution of a product.■

...*And because of greater purity, HD-90* offers you higher product performance. Pilot HD-90 does a kind of cleaning on many hard surfaces that no other material can do at any concentration. That's *maximum quality level!* It means new sales areas for your products.

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Soap Assn. Name Change

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Fels Selects New Ad Agency

* * *

Wiese Joins Dumas Milner

* * *

Jennings to New Breck Post

Raymond E. Reed, vice-president in charge of technical operations for Toni Co., Chicago, has been chosen to receive the 1961 Medal Award of the Society of Cosmetic Chemists. Mr. Reed was to receive the award at the annual meeting of the Society in New York, Nov. 28, for his contributions to the formation and growth of the Society and for his many inventions. He holds 16 patents relating to hair waving.

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Celite is available in three different grades offering you the exact degree of abrasiveness desired. Whether you choose Super Floss, Celite 315 or Snow Floss, you're assured of a thorough cleaning polish that will provide a brilliant, long-lasting lustre. For further information, write Johns-Manville, Box 325, New York 16, N. Y. In Canada: Port Credit, Ontario. Cable address: Johnmanvil.

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Breck Names Jennings

Appointment of John G. Jennings to the newly-created position of director of market research

John G. Jennings

and new products co-ordinator for John H. Breck, Inc., Springfield, Mass., was announced recently. Prior to joining Breck, Mr. Jennings was vice-president in charge of marketing for Noreen, Inc., Denver, Colo.

★

New Fels Agency

Fels & Co., Philadelphia, recently announced the appointment of Richard K. Manoff, Inc., New York advertising agency to handle its $4 million advertising account. Aitkin-Kynett, Philadelphia agency had serviced Fels for the past five years.

★

Zep Merger Talks Off

Merger negotiations between Zep Manufacturing Co., and National Linen Service Corp., both in Atlanta, Ga., have been discontinued, it was reported recently. The companies' widely different lines of business and operating methods made the proposed merger unfeasible, it was announced.

Zep acquired Ludwig Wilson Co., Chicago sanitary supply distributing firm, last month. Wilson, an oldtime sanitary supply firm, will be operated as a division of Zep.

★

Soap Assn. on Labeling

The Association of American Soap & Glycerine Producers, Inc., New York, in a letter to W. S. Bussey, Office of Weights & Measures, National Bureau of Standards, Washington, D. C., has suggested a policy of placing the net weight marking on the top panel of soap and detergent packages immediately adjacent to the price patch. It is felt that in this position the determining of value on the basis of price per ounce would be easier, having both factors, price and weight, together.

The rules and regulations adopted by the National Conference of Weights & Measures Officials last June, require the net weight on a package be placed on the "principal" panel.

The Association has suggested that the National Conference of Weights & Measures Officials modify the present wording of the Model Law or make some statement that the above placement of the net marking would meet the requirements of the present Model Law.

★

Story Joins Armour

Julian R. Story, formerly associated with Procter & Gamble Co., Cincinnati, has joined the formulation section of the soap research department, Armour and Co., Chicago. it was reported recently.

★

Oakite Appoints Two

Herbert J. Peterson and Edward G. Deibert have been appointed to the technical service staff of Oakite Products, Inc., New York, it was announced recently. Mr. Peterson joins Oakite's staff in Chicago, and Mr. Deibert has been assigned to Allentown, Pa.

Wiese Joins Dumas Milner

Eugene E. Wiese was recently appointed director of research and development for

Eugene E. Wiese

Dumas Milner Corp., Jackson, Miss. Prior to joining the firm, Mr. Wiese was associated with the specialty chemicals sales department of Dow Chemical Co., Midland, Mich.

★

Chemway-Weco Merger

Directors of Chemway Corp., Wayne, N. J., and Weco Products Co., New York, recently announced approval of a proposed merger between the companies. The plan will be voted on by stockholders of both companies at meetings to be held in the near future.

The plan calls for an exchange of two Chemway shares for each share of Weco common. Weco produces the Dr. West line of toothbrushes and allied products.

★

Colgate Elects Donahue

Election of Vincent D. Donahue as vice-president in charge of finance was announced Nov. 1, by Colgate-Palmolive Co., New York. Mr. Donahue was formerly controller of Continental Can Co., New York, in charge of administration and supervision of accounting, taxes and systems.

Nowak Named Troy V-P

Milton Nowak, general manager of Troy Chemical Co., Newark, N. J., has been named

Milton Nowak

vice-president in charge of the company's research and production, it was announced recently. Troy specializes in the manufacture of anti-microbials and various specialty chemicals.

Prior to joining Troy in 1956, Mr. Novak was associated with Nuodex Products Co., Elizabeth, N. J., for 16 years, where he served as chief chemist. He is the author of several publications, and holds patents in the field of metallic soaps, stabilizers, and anti-microbials.

—★—

Monsanto Names Hoffman

Paul F. Hoffman has been named product sales manager for pesticides in the agricultural chemicals division of Monsanto Chemical Co., St. Louis, it was announced recently. He succeeds James W. Starrett, who has resigned from the company to start his own business.

Dr. Hoffman, who joined the research department of Monsanto's organic chemicals division in 1954, formerly served in the agricultural division's development department as manager of development for fungicide and insecticide products.

It was also announced that L. H. Hannah assumes responsibility for the entire pesticide development program, which includes insecticides and fungicides. Dr. Hannah, who joined the development department of Monsanto's organic chemicals division in 1952, became manager of the herbicide development program when the agricultural division was formed in 1960.

—★—

Agrees to FTC Order

Frank P. Becker, Inc., New York, recently agreed to an FTC consent order requiring that the firm stop making allegedly false claims concerning the extent of advertising, price, origin and quality of its "Blue Flame" and "Spray Mist" perfumes. The agreement is for settlement purposes only and does not constitute an admission that the firm violated the law.

—★—

Carter Quarterly Report

Carter Products, Inc., New York, recently reported net sales for the quarter ended Sept. 30 at $14,974,153, as compared with $13,880,532 for the same period in 1960. Net income for the period was $2,019,898, down from $2,052,952 for the previous year. Earnings per share were off a penny from 79 cents in 1960.

For the six months ended Sept. 30, sales rose to $30,735,100, as compared with $28,949,769 in 1960. Net income was $4,544,391, up from $4,219,957 the previous year. Earnings per share for the period were $1.75, as compared with $1.62 in 1960.

Gillette Reports Rise

Consolidated net income of Gillette Co., Boston, for the nine months ended Sept. 30, was $32,099,839, compared with $26,695,807 for the same period in 1960, it was reported recently. Net sales for the period were $194,069,824, up from $171,386,731 for the first three quarters of 1960. Earnings per share were $3.43, as compared with $2.85, the previous year.

The board of directors declared an extra dividend of 80 cents a share and a regular dividend of 62½ cents a share on the common stock, both payable Dec. 5, to stockholders of record Nov. 1. A special meeting of stockholders was held Nov. 16, and approved a proposed three-for-one split of the common stock of the company.

—★—

Material Level Control

Flo-Tronics, Inc., Minneapolis, has just introduced its new "Flo-Level" material level control, model L201. Unit is said to detect and control the level of liquids, bulk or semi-dry materials in bins, tanks, hoppers and other containers.

Housed in explosion-proof aluminum casting, 5¾ inches in diameter and six inches high, the unit has a six inch stainless steel, "Teflon" insulated probe, Model has threaded hub for easy mounting into standard pipe coupling.

James Barbour, visual merchandiser, Sears Roebuck & Co., Philadelphia, accepts $500 check, 2nd prize in the "Old Spice" Father's Day Display Contest—Category I—Department Stores in Cities over 220,000 Population, from Charles J. Deignan, Shulton, Inc., Clifton, N. J. sales representative. Looking on are Pauline Hunter, Sears cosmetic division manager and Walter Kavanaugh, store manager.

C-P Ups Daly

James P. Daly was recently appointed regional manager of the north central sales region of the

James P. Daly

associated products division, Colgate-Palmolive Co., New York. Mr. Daly formerly served as a supervisor in the eastern sales region. He is succeeded in that post by Paul Graves of the southern sales district.

Mr. Daly joined C-P in 1949 as a salesman for the associated products group in the Boston area, and was named a regional supervisor in 1957. Mr. Graves, who joined the company in 1957, was formerly a sales representative in Alabama and northwest Florida.

—★—

Hazel Bishop Merger

The boards of directors of Lanolin Plus, Inc., and Hazel Bishop, Inc., New York, have approved the agreement and plan of consolidation of the two companies, it was announced recently. Proxy material on the merger will be submitted to the S.E.C. and distributed to the stockholders of both companies prior to meetings to approve the merger.

The surviving corporation will continue as Hazel Bishop, Inc., with seven members of the nine-man board of directors selected by Lanolin Plus. The merged corporation will continue to market the lines of both firms. Under the merger plan, Lanolin Plus stockholders will receive one share of new stock for every share now held. Hazel Bishop stockholders will receive one share of new stock for every four shares now held.

Sales of Lanolin Plus for the fiscal year ended June 30 were over $14,000,000, and Hazel Bishop's sales for the fiscal year ended Oct. 31, 1961 are estimated at $7,000,000. Hazel Bishop has a cumulative tax loss of approximately $2,000,000, it was reported.

—★—

CSMA Issues Proceedings

The Chemical Specialties Manufacturers Association announced late last month availability of the proceedings of its 47th midyear meeting, held in Chicago, May 1961. The 222 page paper bound volume contains all papers, committee reports and records of other business transacted at the meeting. Each registered participant in the meeting has received one copy of the proceedings. Additional copies may be purchased from CSMA, 50 East 41st St., New York 17, at $7.50 each in the United States, and Canada, $8.00 each in other countries.

—★—

Nopco Defoamers Cleared

The Food and Drug Administration recently published final regulations clearing paper defoamers and adhesive additives, produced by Nopco Chemical Co., Newark N. J., for use in the manufacture of paper, paperboard and containers for the packaging, transporting and holding of food. Other products—wax and wax/rosin sizes, dispersing and wetting agents—are included in extensions granted by the FDA until Jan. 1, 1962.

—★—

West Chemical Earnings

West Chemical Products, Inc., Long Island City, N. Y., recently reported net sales for the nine months ended Aug. 26, were $19,228,000, up from $17,975,000 for the same period in 1960. Net income for the period was $489,000, as compared with $479,000 for the previous year. Earnings per share rose to $1.20, from $1.17 for the same period in 1960.

Conco Chemical V-P

Vance E. Knowles was recently elected to the newly created position of vice-president in charge

Vance E. Knowles

of sales for Conco Chemical Co., Dallas, Tex. In his new position, which replaces the general sales manager, Mr. Knowles directs the company's over-all sales and sales promotion activities.

Prior to joining Conco as a sales representative in 1954, Mr. Knowles was in the Processed Food Inspection Service of the U. S. Department of Agriculture. He was named Conco general sales manager in 1958.

—★—

Better Washable Polishes

Commercial availability of a new acrylate monomer claimed to improve alkali-resistant floor polishes, has been announced recently by Union Carbide Chemicals Co., New York 17.

Special properties exhibited by diethylaminoethyl acrylate monomer result from the contained amino group. This group makes an emulsion polymer "virtually impervious to alkaline cleaning materials, yet sensitive to acid", according to a note in the Nov. issue of *Chemical Progress*, external house organ of Union Carbide Chemicals Co. Films cast from such products are readily removable by mildly acidic stripping materials.

Floor polishes formulated with diethylaminoethyl acrylate are said to show "increased adhesion to almost any common substrate".

Child-mild shampoo with Olin ethanolamines

She's a touchy customer, so treat her gently. Baby her hair and skin with gentle, rain-soft shampoos. A tall order? Not if you base your formulations on emulsions made with Olin ethanolamines.

Mild and essentially neutral, Olin ethanolamines are ideal emulsifying agents for shampoos and cosmetic preparations. The ethanolamine soaps are softer and they extract less oil from the skin. Add their resistance to hard water and their water-retaining powers and you'll see why so many manufacturers employ Olin ethanolamines in their formulas.

Bulk and drum stocks of Olin ethanolamines (mono-, di-, and tri-) are located near you. For product specifications or samples, phone or write OLIN MATHIESON, Organic Chemicals, 745 Fifth Avenue, New York 22.

Ethylene Oxide • Ethylene Glycols • Polyethylene Glycols • Propylene Oxide • Propylene Glycols • Polypropylene Glycols • Ethanolamines • Glycol Ethers • Surfactants • Ethylene Dichloride • Propylene Dichloride 250

ORGANICS DIVISION **Olin**

Donald D. Madden

Owen J. Carroll

Lestoil Products Marketing Executives

FURTHER expansion of the marketing operations of Lestoil Products, Inc., Holyoke, Mass., "signaling the transition of Lestoil from a two-brand company to a multi-product corporation," was announced recently by Daniel E. Hogan Jr., president.

The appointment of two additional marketing executives, a 25 per cent increase in the field sales force, and a realignment of staff responsiblities are part of the program, Mr. Hogan stated.

Heading the new marketing group is Edward J. Fredericks, director of marketing, who joined Lestoil in August. He was formerly marketing director of Simoniz Co., Chicago, and earlier was marketing vice-president of Rubbermaid, Inc., Wooster, O.

In addition to creating four new marketing posts, Lestoil has made one other change in marketing personnel.

Donald D. Madden, has been appointed general sales manager, a newly created post. He was formerly manager of field sales and operations for the household products division of Colgate-Palmolive Co., New York. He had been associated with Colgate for the past 32 years.

Owen J. Carroll has been appointed merchandising manager, also a newly created position. He is responsible for all aspects of advertising, merchandising and promotion. Mr. Carroll was formerly associated with Boyle-Midway Division of American Home Products Corp., New York. Prior to that he was associated with J. Walter Thompson Co., New York advertising agency, and before that as a product group manager with B. T. Babbitt, Inc., New York.

William J. Massey has been appointed to the newly created post of field sales manager. A veteran of Lestoil and its predecessor company, Adell Chemical, he was formerly retail field sales manager, and will now assist Mr. Madden in building a national sales organization.

Marion T. Mocheski, named sales promotion manager, will assist Mr. Carroll in the area of premium and coupon development. Mrs. Mocheski has been responsible for some of Lestoil's most successful premium offerings, including the Lestoil dolls and "Lestare" clowns.

Jeremiah H. Creedon has been named to the newly created position of marketing assistant. He was formerly a salesman for Procter & Gamble Co., Cincinnati, and joined Lestoil earlier this year as a trainee in the company's marketing department.

—★—

Brillo Earnings Drop

Brillo Manufacturing Co., Brooklyn, recently reported net income of $706,860 for the nine month period ended Sept. 30, down from $735,565, for the same period the previous year. Net sales totalled $18,520,743, as compared with $18,910,273, for the first nine months of 1960. Earnings per share were $1.63, off from $1.70 in 1960.

William J. Massey

Marion T. Mocheski

Jeremiah H. Creedon

Proper leveling with KP-140 gives this vinyl floor evenness of gloss. Photo courtesy of Armstrong Cork Company, Lancaster, Pennsylvania.

ARMSTRONG CORK COMPANY uses KP-140 in *five* different floor-care products including new "Heavy Duty Commercial Floor Wax" and new, polymeric "Heavy Duty Commercial Floor Finish." KP-140 makes possible a continuous, smooth film that is extremely rugged.

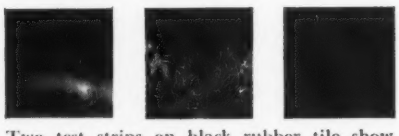
KP-140 not only provides excellent leveling action in emulsion polishes, it has plasticizing ability as well. This is especially useful where the formula contains significant proportions of polymers such as vinyls, acrylics and styrene. KP-140 eliminates high and low spots in gloss; is a major factor in overcoming streaking, crazing, powdering, water spotting and contraction of films. It prevents "puddling," promotes flow.

DUAL PURPOSE

KP-140

leveling agent–plasticizer for floor polishes

To order KP-140, contact your FMC distributor or call us directly at MU 7-7400, New York. We'll speed your request to the office nearest you. Write for data sheet, prices and a list of representatives with warehouse stocks.



Two test strips on black rubber tile show "drawing in" and crazing in floor polish films which do not contain KP-140. Tile on right shows same formulation with KP-140 added.

fmc CORPORATION ®

CHEMICALS AND PLASTICS DIVISION

161 EAST 42ND STREET, NEW YORK 17, N.Y.

American Moves Sekulski

David A. Sekulski has been named branch and area sales and service manager for the Seattle,

David A. Sekulski

Wash., branch office of American Floor Machine Co., subsidiary of American-Lincoln Corp., Toledo. Mr. Sekulski, formerly branch manager for the Indianapolis office, is responsible for sales and service in the Seattle territory. He is succeeded in the Indianapolis position by Joseph C. Loeb.

Mr. Sekulski joined American-Lincoln in 1957, as sales representative and was named Indianapolis branch manager in 1958.

—★—

Floor Polish Review

A thumbnail sketch of the history of bright drying floor finishes appears in the fall issue of *Product Development Quotes*, a newsletter published by Foster D. Snell, Inc., 29 West 15th St., New York 11.

George Rodawold's original "Dri-Brite", first marketed in 1929, was based on carnauba wax and shellac, the article reports. World War II scarcity of imported raw materials made replacements imperative and sparked the search for suitable synthetic resins and other readily available ingredients.

With the end of the war economic conditions changed and shellac once more took a prominent part in floor polishes. Nonbuffable high gloss floor products became available. A pronounced trend to pastel colored floor coverings developed in the post-war period. The floor finish industry met this challenge with very light colored floor products formulated with emulsion polymers or synthetic resin latices, the review reports.

Emulsion polymers in this application were pioneered by Schoenholz and Terry, both working for Snell at that time, according to the article. Their efforts led to the issuance of U.S. Patent 2,596,960 in 1952.

The introduction of emulsifiable low-molecular weight polyethylene to the polish industry was another milestone in the development of high gloss and light color finishes.

Highly concentrated synthetic latices of high molecular weight PE and other light colored emulsifiable waxes are on the way and will yield products of high soil and heel mark resistance, according to this author. Among recent developments, acid soluble polymers are mentioned. These yield alkali resistant polishes, removable with mild acid formulations.

—★—

Economics Qtr. Report

Economics Laboratory, Inc., St. Paul, Minn., recently reported net sales of $8,373,659, for the quarter ended Sept. 30, as compared with $7,533,808 for the same period in 1960. Net income rose to $252,336 from $173,637 a year earlier. Earnings per share were up 15 cents from 29 cents for same period in 1960.

—★—

ADM Changes

Archer-Daniels-Midland Co., Minneapolis, recently announced the transfer of Henry E. Billiat, Jr., to that city as a technical specialist in the resin department. He had been resin sales representative in Kansas City, Mo.

Leslie J. Perrine, technical sales representative in Los Angeles, replaces Mr. Billiat in Kansas City, and George Hare, Los Angeles, succeeds Mr. Perrine.

Niagara Appoints Johnson

Appointment of Oscar Johnson as marketing director of the Niagara Chemical Division of FMC

Dr. Oscar Johnson

Corp., New York, was announced recently. He was formerly assistant division manager for the past two years. In his new post, Dr. Johnson will be concerned with Niagara's proprietary chemicals, and formulations incorporating them. He will also be responsible for the overall direction of technical chemical sales, market research, advertising and promotion, purchasing, and the division's sales development program.

Dr. Johnson joined Niagara Chemical Division in 1946 as a research chemist, and has held numerous positions in the FMC Corp., since then. Prior to joining the organization he was associated with Merck and Co., Rahway, N. J.

—★—

Allied Appoints Holloway

Frank L. Holloway was recently appointed to the newly created position of manager of market development for the plastics division of Allied Chemical Corp., New York. The new department is concerned with the sales development of new applications for the division's thermoplastics.

Prior to his appointment, Dr. Holloway served as technical representative for Allied Chemical in Washington. He joined the company's General Chemical Division in 1956 as a product development specialist.

Copyright 1960 by Givaudan-Delawanna Inc.

Nothing persuades like the fragrance impulse

Throughout the mist of ages and the span of time, the fragrance impulse has always influenced human beings. What timeless thoughts, what emotions are contained in a purposed scent! For the fragrance impulse persuades like a soundless language... speaks powerfully to our senses and moves us to action. How often the fragrance impulse, alone, tells which soap, what lotion, what spray our reaching hand should choose. Yet to create the fragrance impulse is an art. At Givaudan it is a combination of unrivaled knowledge with tremendous resources in perfume chemistry ...and an imaginative understanding of the changing desires of human beings. If you would like the fragrance impulse to work for you, come to Givaudan, where creativity comes first. No one in the world has done so much to add to the meaning of things through fragrance. Givaudan-Delawanna Inc., 321 West 44th St., New York 36, N.Y.

GIVAUDAN

Stepan Surfactant Plant

Stepan Chemical Co., Northfield, Ill., recently announced the establishment of a surfactant plant at Commerce, Calif., a suburb of Los Angeles. The new facility will permit bulk shipments to West Coast customers for the first time.

The unit will include complete quality control laboratories and a West Coast sales office. The plant will be managed by Henry Mork, from the company's Millsdale, Ill. plant. Andrew Pruim, being transferred from corporate offices in Northfield, Ill., is office manager, and Ken Cox, formerly Cleveland district sales manager, has been named West Coast sales manager. Other plants at Maywood, N. J., and Millsdale, Ill., enable the company to serve customers on a nationwide scale.

—★—

Floor Care Film

"Your Floor's Best Friend," a motion picture illustrating floor care and maintenance in institutional house keeping is being produced at the University of Mississippi Medical Center, Jackson, Miss., under a grant from Vestal Inc., St. Louis manufacturer of floor cleaners and waxes.

The film covers all types of floor surfaces and includes instructional diagrams showing how floors wear and what can be done to minimize and prevent wear.

—★—

New Sodium Silicate Plant

Commercial production of sodium silicate was started recently in a new, fully automated plant built by Allegheny Industrial Chemical Co., division of Amerace Corp., Butler, N. J.

John R. Carlson, division general manager, stated initial production capacity of the plant is 10,000 tons per year. Approximately half of the sodium produced is for captive use and the rest will supply users in the northeast market, which represents an estimated 400,000 tons a year. Plant capacity can be doubled within a short period of time and with a small capital investiment, according to Mr. Carlson. Allegheny's own consumption of sodium silicates, used in the production of magnesium silicate and other non-soluble silicates and silica gels, reportedly has tripled since 1958.

Commerce, Calif., surfactant plant recently established by Stepan Chemical Co., Northfield, Ill. Unit also houses quality control laboratories and West Coast sales office.

New Soap Assn. Name

The Soap Association may change its name to the Soap and Detergent Association. At a meeting of the board of directors of the Association of American Soap & Glycerine Producers, Inc., in New York City, Nov. 15, the board voted its approval of the name change. The action of the board will be voted on by the general membership of the Soap Association at its 35th annual convention in New York next month.

—★—

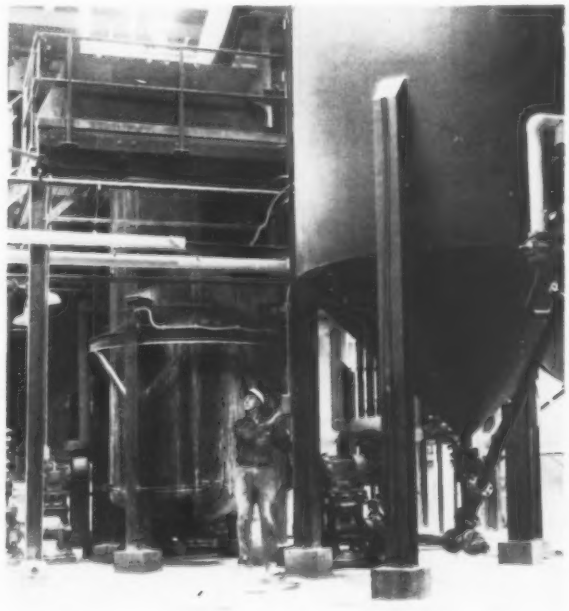
Fritzsche Elects Officers

Officers of Fritzsche Brothers, Inc., New York, elected by the company's board of directors at a meeting held Nov. 21, are:

President, Frederick H. Leonhardt, Jr.; executive vice-president and treasurer, Ellis F. Merkl; vice-president and technical director, Edward E. Langenau; vice-president and secretary, Arthur J. Hamminger; senior vice-president, Ernest Guenther; vice-presidents, Lidcay Herrera, Julius P. Bauer and Peter T. Wood; and assistant secretary and assistant treasurer, Emil C. D'Andrea.

Directors of the company elected at a special meeting of the stockholders on that date are:

Frederick H. Leonhardt, Jr.; Dorthea L. Cassullo; Ellis F. Merkl; Ernest Guenther; and Edward E. Langenau.



Worker checks apparatus at new sodium silicate plant of Allegheny Industrial Chemical Co., Butler, N. J. Plant's initial production is estimated at 10,000 tons per year.

Monsanto

You are cordially invited *to visit*

the MONSANTO SUITE – 708 *at Hotel Chatham in New York during the*

CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION

48th Annual Meeting for an introduction to the new line of Monsanto products developed especially for the Chemical Specialties Industry.

Monsanto

IFF, Ltd. Appoints Banwell

Appointment of Douglas S. Banwell as sales representative for the flavor division of International

Douglas S. Banwell

Flavors & Fragrances (Canada), Ltd., was announced recently.

Mr. Banwell, who was formerly associated with Imco Container (Canada), Ltd., and Armstrong Cork (Canada), Ltd., will be headquartered in Toronto.

—★—

DuPont Personnel Changes

Wallace E. Gordon was recently named general manager of the industrial and biochemicals department of E. I. du Pont de Nemours & Co., Wilmington, Del. Formerly assistant general manager, Mr. Gordon succeeds Clark W. Davis, who has retired after more than 44 years with the company.

It was also announced that Benjamin F. Schlimme, planning manager of the department, was named assistant general manager, succeeding Mr. Gordon. The industrial and biochemicals department produces the company's agricultural chemicals, anti-freezes, and a broad line of industrial chemicals.

—★—

Northwest Adds Chemicals

Northwest Chemical Co., Detroit unit of the chemical products division of Chemetron Corp., Newport, Tenn., recently announced an agreement to distribute, in the midwest, the chemical specialties produced by Conversion Chemicals Corp., Rockville, Conn.

Northwest manufactures chemicals used in the metal working industry, including cleaning and phosphatizing chemicals, and Conversion Chemicals produces the "Kenvert" line of chromates, brighteners, bright dips, deburring solutions and protective dips.

—★—

Gould Named Director

Bernard Gould, president of Boyle-Midway division of American Home Products Corp., New York, was recently elected to the board of directors of McGregor-Doniger, Inc., New York manufacturer of men's and boys' sportswear.

—★—

Shulton Advertising Plans

Shulton, Inc., Clifton, N. J., recently outlined its advertising campaign for the Christmas holiday period. A four-pronged promotion campaign, both in print and on the air, featuring women's toiletries and "Old Spice" for men, is scheduled. A separate promotion has been set up for "Yorktown 1781" men's line, the company states.

Life and *Good Housekeeping* magazines will carry full color, double page spreads, followed by single full color pages in other magazines including: *Seventeen*, *McCall's*, *Redbook*, *Look*, and *This Week*. Co-sponsored network TV programs and separate TV spot saturation will also be employed. Newspaper space will be used during the period immediately preceding the holidays.

Simultaneously "Yorktown" will be featured in a four color campaign in *Esquire*, *Sports Illustrated*, *Time*, *New Yorker*, *Vogue*, *Harper's Bazaar*, *Town & Country*, *Holiday* and *The New York Times Magazine*.

—★—

Dameron Aseptic Program

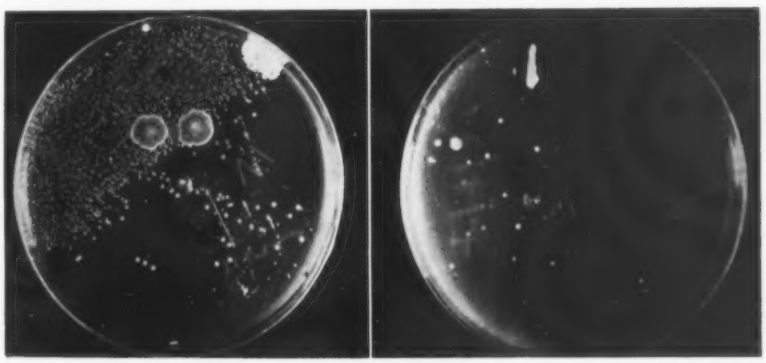
Dameron Enterprises, Inc., Louisville, Ky., manufacturing chemists, recently announced the development of a complete aseptic program, aimed at controlling staphylococcus and other infections in hospitals, schools and other institutions.

Basically aimed at staphylococcus, the program reportedly is applicable to all organisms that can cause cross infections in hospitals. It also is said to be suitable for controlling all forms of bacteria and fungus infections wherever people congregate.

According to Dameron, the program is built around a series of bacteriostatic and bacteriological products sold under the "Vi-Lan" tradename.

The program is claimed to provide aseptic cleaning and protection of floors, walls, ceilings and other surfaces, as well as controlling infectious dust. It is reported to have been tested in a Louisville hospital for a year. The program is said to be the first of its kind offered in complete package form.

Photographs of microorganisms taken from corridor floor of a Louisville, Ky. hospital. Left: microorganisms before floor was treated with "Vi-Lan Floor Finish" and cleaned with "Vi-Lan Bact-Clean," both produced by Dameron Supply Co. Right photograph shows germ reduction after floor was treated.



New POLYOX water-soluble resins give toiletries that creamy-smooth feel

POLYOX resins add a pleasing lubricity to facial and hand creams . . . brushless shaving creams . . . lotions and other toiletries. In toothpastes, they give a desirable "mouth feel."

You can choose from a wide range of viscosities with POLYOX resins. In three grades, they have molecular weights ranging from several hundred thousand to over six million. Truckload quantities of POLYOX resins are available *now*—as are samples for laboratory projects and evaluation.

A Technical Representative in the CARBIDE office nearest you can give you more information on POLYOX resins. He can suggest starting formulations, and supply price and shipping information. For a new technical bulletin listing grades, properties, and numerous applications, write Dept. H, Union Carbide Chemicals Company, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, N.Y.

POLYOX and UNION CARBIDE are registered trade marks.

UNION CARBIDE CHEMICALS COMPANY

UNION CARBIDE

Ryco Installs New, Extra Large Reactor

EQUIPMENT combining capacity with extreme flexibility is needed in a modern specialty chemicals plant. To fill these prerequisites for success, Ryco, Inc., Conshohocken, Pa., has just installed a 5,000 gallon glass-lined reactor, said to be one of the largest in the industry.

Housed in a new explosion-proof building, the reactor offers the capacity of a continuous unit, when needed, while retaining the flexibility of batch operation, Ryco contends. More uniform product quality and faster deliveries are the unit's advantages from the customer's point of view.

Ryco makes wetting and emulsifying agents; fatty nitrogen condensation products for hard waxes; cationic emulsifiers; emulsion polymers for floor waxes; and other basic materials for detergents, floor products and other chemical specialties.

Production runs are often short and shipments must sometimes be made in less than carload lots. Ryco assumes a product life of only six years. Although the firm is still selling some products which were developed at the time of its inception, the bulk of its sales stems from items not in existence, five years ago. Versatility and flexibility are of the essence in such an operation.

The new reactor, said to fill the bill, is designed for fully automated programmed production. Suitable controls may be installed at a later date, Ryco indicates. Meanwhile, the installation provides accurate control of weight, temperature, pressure, mixing time, and reactant input.

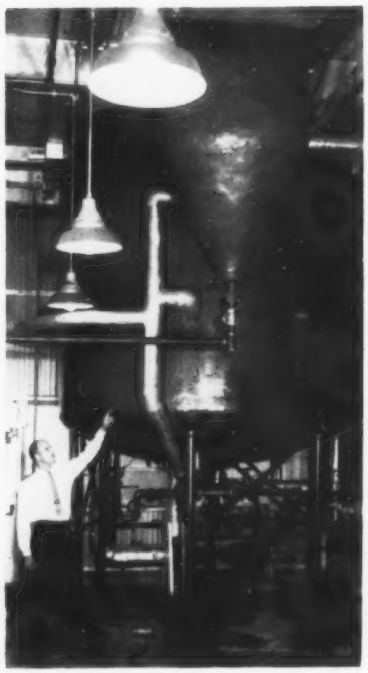
Average batch handled in the reactor runs between 3,500 and 4,000 gallons. The agitator is equipped with a double turbine. Condenser, decanting vessel, receiver, continuous reflux system and ancillary fittings are constructed of type 316 stainless steel. Built for either vacuum or pressure type operation, the unit features an oversize horizontally installed condenser.

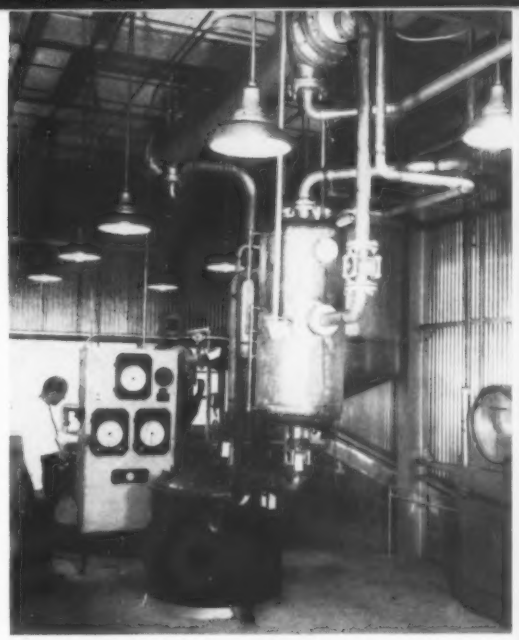
In conjunction with the new reactor, Ryco has installed a weigh tank for exact loading of the unit. In addition to insuring accuracy, the weigh tank reduces production costs by dispensing with variable speed and volume pumps. A simple valve controls the gravity flow of materials to the reactor.

Processing temperature is controlled by water under pressure. At a rate of 300 gallons per minute water is being introduced through six inlets into the high-pressure jacket surrounding the unit. A swirling flow pattern maintains maximum heat transfer. Explosion-proof pneumatic controls in a cascade arrangement keep water and, in turn, product temperature at the preset level — within plus or minus one degree.

In the future, the new installation may also be used for sulfonation of materials produced elsewhere. Ryco's plans call for the addition of four new smaller reaction vessels which have already been purchased. Ranging in capacity from 1,000 to 1,500 gallons, these units will provide pilot plant and testing facilities as well as additional small batch production capacity.

Bottom of receiver is pointed to by Dan Whiteman, president of Ryco. Behind receiver is bottom of 5000 gallon reactor tank in Ryco plant.





Dan Whitman, Ryco president, checks recorder control for new 5000 gallon glass lined reactor.

—★—

Krapp Joins P&G Research

Paul J. Krapp has joined the research division of Procter & Gamble Co., Cincinnati, it was announced recently.

Aerosol Winners

(*From Page* 188)

"Glade" not only received the "best of show" award, but also won top honors in the room deodorants class, one of the 14 product categories in which awards were made. Awards are made on the basis of good design and general sales appeal of the package.

Best foreign entry was "Max" fly killer by Mondart, Ltd.

This year's competition, the tenth, far surpassed the 1960 record of 270 entries. Foreign produced aerosols accounted for 112 of this total, with five edging out domestic entries in the following product classes: hair preparations; perfumes, colognes and toilet waters; other personal products; horticultural products; insecticides, repellents and moth proofers; and veterinary and pet products.

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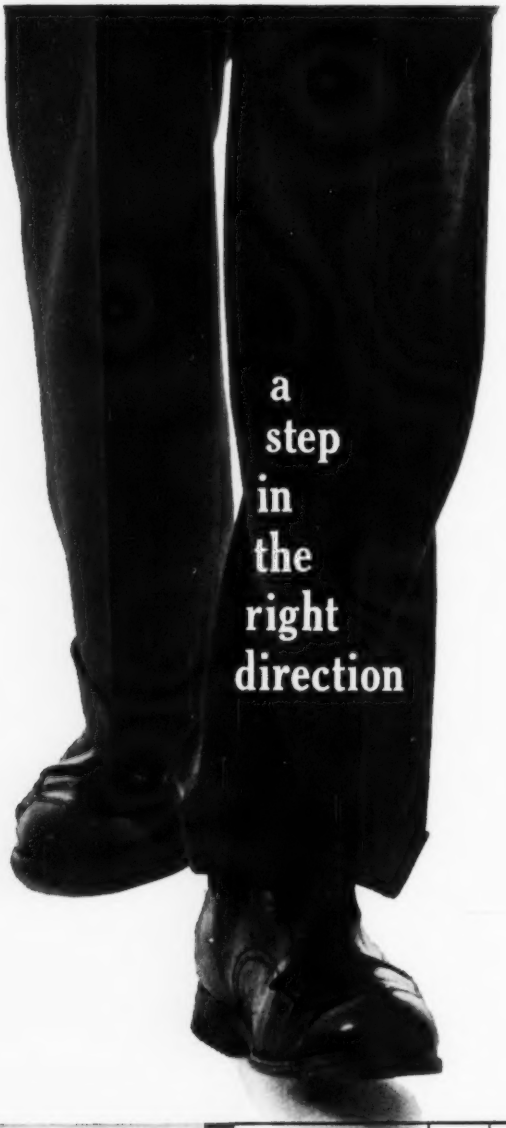

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properties of SC aromatic solvents

PRODUCT	Initial °F.	Dry °F.	Dry °C.	Flash Point °F. (Closed Cup)	Speed Evap. Min.	Kauri Butanol Value	Aniline Point °F.	Specific Gravity @ 60°F.	Lbs. Per Gal. @ 60°F.	Aromatic Equivalent Content
SC Solvent #1	211	240	116	30	2.5	86.4	+ 1	.8259	6.88	74%
SC Solvent #1-A	202	235	113	25	2.5	67	+48	.8003	6.66	52%
SC Solvent #2	270	308	153	81	14.0	80	— 2	.8418	7.01	76%
SC Solvent #2-B	277	370	188	81	21.5	75	+12	.8388	6.99	68%
SC Solvent #3	356	400	204	135	64.0	72	+24	.872	7.26	69%
SC Solvent #28	329	379	193	122	51.0	73	+14	.8597	7.16	74%
SC Solvent #100	321	351	177	115	21.0	93.2	—37	.8708	7.25	96%
SC Solvent #150	369	412*	211*	152	98.0	91.8	—26	.8899	7.41	96%
SC Solvent #450	450	588*	309*	212	750	73	+10	.9279	7.73	

*End Point

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Firmenich Rep. Visits U. S.

Ernesto Ventos, Spanish representative for Firmenich et Cie., Geneva, and his wife, are combining business and pleasure during their current trip to the United States. He is well known to the essential oil and perfume industry in this country, as a producer of rosemary and spike lavender essential oils.

Ernesto Ventos

—★—

Acquires Lilly Dache

Lanolin Plus, Inc., New York, has acquired Lilly Dache Cosmetics, Inc., New York, it was announced recently by Morton Edell, president. Lilly Dache will be operated as a wholly owned subsidiary and the name will also be used on a line of French fragrances, it was reported.

—★—

Unilever on Big Board

Unilever, N. V., Netherlands, and Unilever, Ltd., Great Britain, recently filed formal applications to list their stock on the New York Stock Exchange. The listing involves 23,981,200 shares of Unilever N.V. common stock and 33,702,861 shares of Unilever, Ltd. common stock. Together, the two companies own the world-wide Unilever interests, including Lever Brothers Co. and Thomas J. Lipton, Inc., in this country.

Unilever N. V. shares to be listed will change from a 1,000 guilder par value to 20 guilders, par value. This is a technical split of the stock, 50 for one, though no additional shares will be issued. A 20 guilder par value is equal to approximately $5.50.

Before listing its shares, Unilever, Ltd. will call a special meeting to approve a split of the common stock, four to one. Par value of the shares to be listed on the exchange will change from one pound, sterling, to five shillings, equal to approximately 70 cents, par value.

—★—

Elected to TGA Board

Paul D. Blackman, president of the House of Fragrance, Inc., New York, and Franklin G. Meeker, executive vice-president of Andrew Jergens Co., Cincinnati, have been elected to the board of the Toilet Goods Association, New York, it was announced recently.

—★—

1962 P E & M Show Set

The 13th National Plant Engineering & Maintenance Show will be held Jan. 22 through 25, 1962, at Convention Hall, Philadelphia. Concurrently with the show, the 13th annual Plant Engineering & Maintenance Conference will also be held at Convention Hall. Both the show and the conference are expected to be the largest in the past 13 years, it was reported.

New Onyx Bulletin

A technical bulletin describing "Maprofix HM" has just become available from Onyx Chemical Corp., 190 Warren Street, Jersey City 2, N. J. The product is a powdered grade of sodium lauryl sulfate admixed with sodium carbonate and sodium bicarbonate. Suggested uses include powdered detergent formulations, fabric cleaners, metal and floor cleaning compounds, and other hard surface cleaning applications.

Good emulsifying action and detergency, as well as low cost are claimed for the product.

—★—

Opie Brush Plans Move

Opie Brush Co., 1422 McGee St., Kansas City, Mo., recently announced it will move to 2004-06 Baltimore St., that city, on approximately Jan. 2, 1962. The firm's present location is being razed for a freeway project.

The new 22,000 square foot, three story building is served by both rail and truck dockage. The change will more than double the firm's present facilities, located on McGee St. since 1924. Extensive alterations and the installation of new and automatic equipment for certain types of brushes are contemplated, Opie states.

New home of Opie Brush Co., 2004-06 Baltimore St., Kansas City, Mo. Firm will move into building around Jan. 2, 1962.

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RHOPLEX B-83

Lehn & Fink Director

Edward A. Schrader, a partner in Goldman, Sachs & Co., New York investment bankers, has been elected to the board of Lehn & Fink Products Corp., New York, it was announced recently.

—★—

Chemical Assn. Directors

S. A. Mattison, Hooker Chemical Corp., and W. M. Creasy, Lummus Co., both in New York, were recently elected directors of the New York Chapter of the Armed Forces Chemical Association, 345 East 47th St., New York. Mr. Mattison is director of public relations for Hooker, and General Creasy, former head of the Chemical Warfare Service, is a vice-president of Lummus.

AOCS on Detergents

(From Page 67)

the micelles compete for the calcium ions. For NaDBS, the arrangement on the Graphon is not altered by the calcium but other results are similar.

Trace amounts of calcium strongly enhance the flocculation of the Graphon, the authors found. This finding suggested that deposition of the surfactant-coated Graphon onto cotton should be followed as a function of added calcium. It was established that traces of calcium greatly increased the deposition apparently by bridging surfactant on the Graphon to surfactant on the cotton.

Albert R. Martin of Whirlpool Corp., St. Joseph, Mich., presented two papers. "A New Relationship Between Reflectance Data and Soil Removal" was the title of a contribution offering a simplified form of the Kubelka-Munk equation for soil removal calculations. The proposed modification is of the form:

$$S = e^{-k\triangle R} \qquad (1)$$

where, S is the fraction of soil remaining on the fabric after washing, $\triangle R$ is the increase in reflectance upon cleaning and k is a coefficient that has a virtually constant value of 6.20 over the range of reflectance values, .2–.7.

The derivation of equation 1 was presented and its significance and limitations were pointed out. Data are presented, using radioactive iron oxide as a soil, that give a verification of Equation 1 that is independent of the Kubelka-Munk equation. These data indicate that the numerical value of the coefficient in Equation 1 depends upon the degree of dispersion of the soil particles, but approaches a limiting value as the particle size of the soil becomes very small.

It is possible that the peptizing power of detergents for soil can be a disadvantage when the detergents are used on heavily soiled fabrics in insufficient quantity to insure good soil removal, Mr. Martin said. Conditions are possible where the wash bath actually becomes a soiling bath and serves to fix the soil on the fabric.

The speaker warned of the dangers inherent in using reflectance data to measure soil removal without advance knowledge of the colloidal character of the particular model soil being used.

Mr. Martin's second paper dealt with "A New Concept in Artificial Soiling", co-authored by Allan Tincher, Philip Rutkowski, and D. C. Wood, all of Whirlpool.

Artificially soiled cloth samples that are sensitive to small differences in the usual detergency parameters of concentration, water hardness, temperature, wash time, and formulation, are not accurate measuring sticks for evaluating differences in mechanical action between washing machines, Mr. Martin pointed out. Conversely, a sample that does measure machine differences with accuracy is quite insentitive to the above detergent parameters.

The speaker demonstrated that the difference between these two types of soiled sample lies not in the formulation used, but in the degree of dispersion of the particulate soil during soiling.

Samples soiled with clay and oleic acid by a simple dipping procedure are quite sensitive to the above detergency parameters, he reported. Samples soiled with the identical formulation, but in a washing machine at high agitation (85 strokes per minute), were very insensitive to changes in the detergent bath, but responded in a most satisfactory manner to changes in the mechanical action during the washing process, it was pointed out. Tuzson and Short have shown that clay, carbon black and similar colloidally dispersed particles will agglomerate unless the bath is kept agitated above a critical level. From their observations and those reported by the speaker, it was concluded that dispersion of particles during soiling permits deep penetration into yarns and allows the particles to become adsorbed in a disperse form on the fiber surface. This type of soiling is typical of "redeposited soil," and the mechanical action of the washer may be a major factor in promoting it if the wash bath is not capable of holding all of the soil that it removes.

Summing up, the authors believe to be in possession of a procedure for soiling cloth that yields a sample sensitive to mechanical wash action but quite insensitive to detergent action of a purely chemical nature. "We have studied the factors of washing intensity and duration and found a very orderly and sensitive response. The next phase of this investigation is to study the response of this soiled cloth to the loading factor in the washing process, as well as to obtain more refined data of the type given here," Mr. Martin said.

A paper dealing with "Reactions Between Zinc Salts and Surfactant Solutions", by Robert D. Vold and Hakim Singh of the University of Southern California, Los Angeles, was presented by W. M. Linfield of Armour & Co., Chicago. This work was undertaken as a step toward understanding the effect of zinc oxide on the stability of emulsion paint systems.■

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Hooker, Ltd. Expands

Hooker Chemicals, Ltd., Canada, recently announced plans for a one million dollar expansion program of its chlorine and caustic soda manufacturing facilities located at North Vancouver, B. C.

The original plant, built in 1957 at a cost of $12 million, was the first chlor-alkali plant in Canada west of the Rockies.

Switch to Plastic

(*From Page* 235)

sion until the chuck places and tightens the cap. The chuck continues to hold the capped container until the chuck is lifted. It is not possible to hold a plastic bottle with this same action as the bottle would be squeezed and some of the contents might be lost. In any event the container would retain the same distorted shape it had when it was being capped. Therefore, the jaws are each provided with a threaded stop, which is adjustable to allow the jaws to not quite grip the bottle. The shape of the jaws prevents the bottle from turning when the cap is tightened. A metal finger (see photograph on page 231) protrudes over the shoulder of the bottle and holds it down when the chuck is stripped from the cap. This is a good illustration of the different handling techniques required for plastic containers.

Plastic bottles must be flame treated if they are to be glue labeled, a process shown in Figures 6 and 7. Your supplier will do this for you but we perform this operation ourselves as shown in Figure 7. This photograph is a closeup of the fish tail burner nozzle used to spread the flame over the entire surface. We were able to use our regular glue and had no labeling problems.

We were able to meet our in stock date and matched the direct labor costs of the glass bottles. An additional source of satisfaction is the knowledge that some of the modifications resulted in improved line efficiency for glass bottles as well.

Our experience and that of other firms packaging in plastic should encourage those of you who are about to enter this field. The equipment suppliers have now had considerable experience and we suggest you consult them early, even before you decide on a bottle design. They may be able to advise you against a shape that would present handling problems on your line.

If you have a positive displacement or gravity filler, you should be able to fill plastic bottles. To tie this filler into an automatic line all friction or drag on the empty bottle should be reduced. The elimination of dead plates and the use of "Teflon" or silicone should be considered. Avoid distorting the bottle during filling or capping. After the bottle is filled and capped its behavior is similar to a glass container.■

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Crown Presents New Mixer

A new mixer intended for fluid mixing and blending in laboratory and production was introduced recently by Crown Cork & Seal Co., Philadelphia. The new "Vibro" mixer is based on ultrasound principles, operates through an electrical vibrator. A wider range of viscosities can be handled by this unit than by equipment of more conventional type.

The mixer is claimed to combine handling ease with mobility, speed, and "unusual reliability." It is said to yield a uniform product with minimum aeration.

The unit consists of an alternating current vibrator contained in a rectangular housing. The vibrator is connected to a long rod on the free end of which a number of different stirrers can be mounted. Selection of the stirrer depends on the characteristics of the material being handled and on the type of mixing action required.

The most commonly used stirrer is a plate with a number of specially shaped openings. This plate can be mounted with its openings facing up or down and the direction and velocity of mixing can be controlled by use of different plates and types of openings.

In operation, the unit is suspended above or through the vessel so that the driving plate is submerged in the liquid. The vibrator action, transmitted to the rod and the plate, causes an up and down motion the amplitude of which creates the desired motion of the liquid.

New "Vibro" ultrasonic mixer

Table II. Effect of Oleic Acid on Hardness of Polish Solids

	Penetration, 77°F. (ASTM D-1321-57T)					
Parts oleic added	0	2.5	5.0	10.0	15.0	20.0
Formula 1						
Wax solids	3.0	4.0	5.5	8.0	13.0	18.0
Wax solids & resin	2.0	3.0	4.5	6.0	8.5	12.5
Formula 2						
Wax solids	4.5	5.0	6.0	8.5	10.5	13.0
Wax solids, KOH reacted	3.5	4.0	4.5	6.0	8.0	10.0
Formula 3						
Wax solids	4.0	5.5	6.5	8.5	10.5	13.5
Wax solids, KOH reacted	4.0	4.5	5.0	7.5	10.0	12.5

Petroleum Waxes

(From Page 112)

Figure 3 shows the effect of blending oleic acid with the components of Formula 1. Two things become immediately apparent. First, the resin in the formula contributes little toward increased hardness. The two curves are almost identical. Secondly, the range of oleic acid required for emulsification is in the critical part of the curve where small variations in the amount of oleic used have drastic effects on the hardness of the solids in the blend.

Because this particular type of formula requires a large amount of organic base in the emulsifier system, we checked the penetration of the total blend as constituted just before the beginning of emulsification. This value was 15.0, indicating that the triethanolamine has a quite definite softening effect on the solids.

It is interesting to note the influence that the carnauba wax is having on the blend. Up to about 10 per cent oleic acid, the contour of the curve follows that of carnauba very closely. Above 10 per cent oleic acid, however, the influence of the oxidized microcrystalline wax begins to manifest itself rather strongly and the curve falls off in about the same way as does the curve for oxidized microcrystalline wax. Unfortunately, the oleic acid requirement lies in that part of the curve.

(To be Continued)

"Acid-Sensitive" Polymers

(From Page 153)

polish is smeared or removed by the detergent solution, and that the "acid-sensitive" polish is not attacked. Next, the acidic stripper has been applied to the "acid-sensitive" polish. A quick demonstration of its easy removability is made. All of this can be done in an approximately one-half hour call on a customer. Customers are invariably pleased to be shown a readily removable polish that they can maintain and clean by the free usage of alkaline cleaners without damaging the lustre of the film.

Cost

The raw material cost of the "acid-sensitive" polish formulations is estimated to be about twice that of the conventionally used alkali-sensitive polishes. The higher costs, of course, are a problem that must be overcome by the sales advantages or by the development of lower cost "acid-sensitive" polymer finishes.

Reference

1. Steinle, J. V., Proceedings of Chemical Specialties Manufacturers Association, Inc., p. 228, December 1959.

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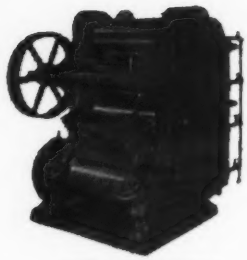

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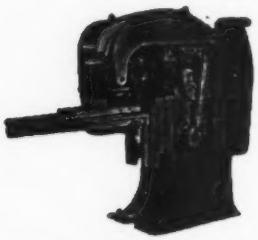

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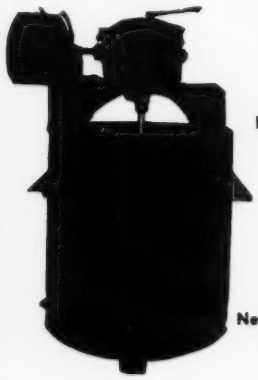

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(*Continued on Page* 279)

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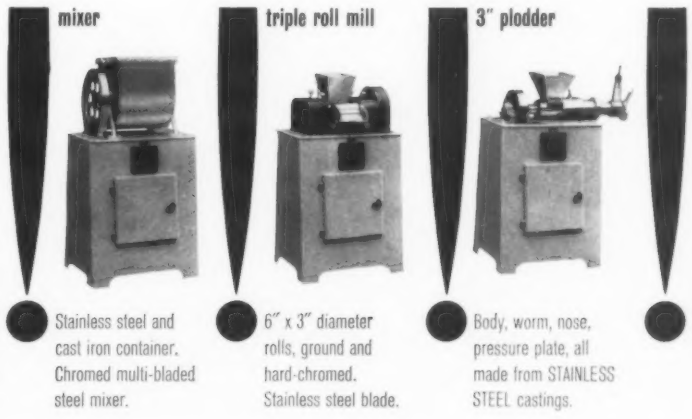

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British Detergent Mfrs.: Prepared to discuss with interested company question of manufacturing or selling products under license. Would consider exchange of technical information. Interests are well-established in the food industry. Address Box 705, c/o *Soap*.

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(*Continued on Page* 280)

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CMCS Meeting

(*From Page* 133)

but also because of technical problems." On the other hand, Mr. Schneible reported that "aluminum aerosols in attractive colors and shapes will have application here, particularly in the 6 and 8 ounce sizes. The degree of penetration will probably depend upon the relative cost of steel and aluminum containers, since most products have relatively low manufacturing and retail gross margins, and container cost is an important factor."

A "good percentage" increase for sizes smaller than 6 ounces was forecast by Mr. Schnei-

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Seth Schneible, product sales manager, Crown Cork & Seal Co., Philadelphia, discusses "Current Status and Future of Aerosol Packaging" at 4th annual CMCS meeting in Toronto last month.

ble, "but use will likely be limited to high gross margin items like colognes and perfumes and certain drug products due to the fixed and semi-fixed costs of components and filling charges," he said. This area is where prospects for aluminum aerosol use appear to be "brightest."

As for sizes larger than 16 ounces, Mr. Schneible predicted "good percentage increases," but these gains may be limited by the fact that containers of over 16 ounces will be too heavy for ordinary household use.

Mr. Schneible predicted a "big potential" for pressurized packaging of foods and pharmaceuticals, with the new "piston aerosols" helping growth in 1962. Other factors that will contribute to the growth of pressure packaging include new interior can coating that will add to shelf life of hard to handle products.

Mr. Schneible concluded by pointing out that:

"Aerosol packages of the future must contain quality products that provide the consumer with a reason for purchasing a pressure dispensed product. There must be an advantage provided by the aerosol for the consumer over the same product marketed in a conventional package. The container must not only provide product compatibility but also have an attractive label design and be properly styled for the sex of the consumer."

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COMING MEETINGS

American Chemical Society, national meeting, Washington, D. C., March 20-29.

American Oil Chemists' Society, national meetings, Roosevelt Hotel, New Orleans, May 7-9; Royal York Hotel, Toronto, Oct. 2-4, 1962.

Association of American Soap & Glycerine Producers, 35th annual convention, Waldorf-Astoria Hotel, New York, Jan. 24, 25, and 26.

Canadian Manufacturers of Chemical Specialties Association, Queen Elizabeth Hotel, Montreal, Nov. 5-7, 1962.

Chemical Specialties Manufacturers Association, 48th annual meeting, Roosevelt Hotel, New York, Dec. 4-6, 1961; 48th midyear meeting, Drake Hotel, Chicago, May 14-16, 1962.

Chicago Perfumery, Soap & Extract Assn. annual business meeting (luncheon), Sheraton Towers, Dec. 12; Christmas Ball, Conrad Hilton Hotel, Dec. 16.

Drug, Chemical and Allied Trades Association, annual meeting, Waldorf Astoria Hotel, New York, March 1.

National Sanitary Supply Assn., 39th annual convention and trade show, Coliseum, New York, May 26-29, 1962.

Northeastern Weed Control Conference, New Yorker Hotel, New York, Jan. 3-5.

Packaging Institute, 24th annual national forum, Conrad Hilton Hotel, Chicago, Oct. 15-17, 1962.

Salesmen's Association of the American Chemical Industry, Christmas party, Waldorf Astoria Hotel, New York, Dec. 13.

Society of Cosmetic Chemists, N. Y. chapter, Chemists' Club, New York, Jan. 10.

Synthetic Organic Chemical Manufacturers Association, annual dinner, Dec. 7; monthly meetings, Roosevelt Hotel, New York, Jan. 9; Feb. 13; March 13; April 10, 1962; annual outing, Skytop, Pa., May 21-23.

Toilet Goods Assn., Scientific Section, Waldorf-Astoria Hotel, New York, May 9, 1962.

Toilet Goods Assn., 27th annual meeting, Chateau Frontenac, Quebec, June 24-29, 1962.

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* * * * *

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* * * * *

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* * * * *

3. Soap Manufacture by Davidson, et al.

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tale ends

GENEVIEVE H. Schultes, daughter of Leonard H. Schultes, v-p of Hewitt Soap Co. has joined the U. S. Peace Corps and is going to West Pakistan as a laboratory technician in a hospital. Genevieve is 22 years old, a graduate of Wheaton College with a major in biology. She took her initial training at Colorado State University. She spends 30 days in Puerto Rico for field training before leaving for her assignment with a group of 36 youngsters. More power to a gang of dedicated kids!

* * * * *

Looking out of our office window we note that the plant and offices of John T. Stanley Co., 642 W. 30th St., New York, have recently been repainted. As part of the "face lifting," the Stanley building now carries an advertisement for "Sapolio" cleanser. Stanley's plant, incidentally, is located on some of the most valuable real estate in New York City. Quite a spot for a soap plant!

* * * * *

We've heard of people planning new hobbies or avocations, such as flying, furniture finishing, etc., in preparation for their retirement, but so help us, this is the first time we've ever come across anyone learning to type. That's what surprised us so much when we met Roy Peet, secretary-manager of the Soap Assn., trudging along Madison Ave. recently with a book on the subject in his hand. Roy confessed that when he retires he'll have to be his own secretary, and thus is learning to touch type. Sort of like former President Eisenhower learning to drive an automobile.

* * * * *

The holiday season of cocktail parties, receptions and soirees has officially opened. Kicking off the 1961 season was the annual reception of Givaudan-Delawanna, Inc., New York, at that city's University Club, Nov. 14. On hand for a very pleasant evening were Andre Givaudan, head of Givaudan & Cie, Geneva, Switzerland; Ernest Durrer, president, and R. E. Horsey, vice-president in charge of sales of Givaudan-Delawanna, most of the firm's sales and technical staffs, and about 200 guests representing the soap, detergent, chemical specialties, cosmetics, toiletries, perfume, and pharmaceutical industries.

* * * * *

The old order changeth . . . It seems like only yesterday that Roscoe Edlund visited the offices of this publication to find out if there were a trade association of soap manufacturers. We suggested he talk to Sidney Colgate, then head of the Colgate company and Frank Countway, bossman of Lever Brothers in Cambridge, to see if they might be interested in the idea. They were and Rosco became the first manager of the Association of American Soap and Glycerine Producers. Now, some 30 odd years later, old AASGP may become The Soap and Detergent Association. The AASGP board, meeting in New York, Nov. 15, approved a proposal to change the name of the Soap Association. The change will be voted on at the membership meeting of AASGP at its 35th annual meeting in New York next month.

* * * * *

Sage advice from Joe Gregory of Newman-Green, Inc., Addison, Ill., aerosol valve manufacturers, speaking at the recent meeting of the Canadian Manufacturers of Chemical Specialties Association in Toronto. Said Joe: "Be kind to your competitors, tomorrow they may be your customers." How true, how true, particularly in the fast-changing field of pressure packaging.

* * * * *

Waxing military transport airplanes saves U. S. taxpayers money, we are happy to learn. According to a news service story from Hickam air force base in Honolulu, big C-118 airplanes (the military's version of the DC-6), when waxed and polished make the round trip from Hickam to Japan one hour faster than similar aircraft without wax. The hour saves 370 gallons of high test, expensive aviation fuel.

* * * * *

Inflation may be boosting the prices of a lot of commodities, but not toilet soap. With keen and unusual interest we note that the current retail price of "Camay" toilet soap of Procter & Gamble Co. is the same as it was back in 1957. Three cakes of hand size "Camay" retail for 29 cents; the bath size is still 2 for 29 cents. Wanna bet Senators Hart and Kefauver will be interested in knowing about this?

* * * * *

We're sure Nils S. Dahl, general manager of John T. Stanley Co., New York, and for more than a quarter of a century treasurer of the Soap Assn., would love to hear from his friends in the soap business. Nils has been hospitalized for the past several months. He may be reached at St. Vincent's Hospital of New York, Seventh Ave. and 11th St., New York City. Another member of the Stanley organization, Alfred T. Stanley, is hospitalized with a broken hip. Alfred, who is president of Stanley, is 93 years old, and was active in the business until his recent accident.

* * * * *

Neil H. McElroy, chairman of Procter & Gamble Co., is being mentioned as a possible Republican candidate for Governor of Ohio. The former U. S. Secretary of Defense and past president of the Association of American Soap & Glycerine Producers would seem to have all the qualifications. Now, if he needs a good campaign manager, we'd suggest he hire Howard Young, head of Davies-Young Soap Co., Dayton, who knows all the rough and tumble of political life in Ohio. Howard is chairman of the Republican Party in Hamilton County, Ohio.

Smiling recipients hold certificate presented to Calgon Co., division of Hagan Chemicals & Controls, Inc., and Standard Packaging Corp., Allegheny-Fuller Division, both in Pittsburgh, by the Lithographers and Printers National Association for the new Calgon "Delicare" package. Award was based on the printing of the foil overwrap design and overall merchandising appeal of the package. Left to right are: Elmer E. Yochum, art director, Ketchum, MacLeod & Grove, Inc.; Philip Kennedy, sales manager, Standard Packaging; John W. Rowles, Calgon new products manager and Charles E. Kaufman, purchasing agent for Hagan.

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